

# Service Manual

Dolby B • C NR-Equipped  
Stereo Double Cassette Deck

Cassette Deck  
**RS-X888**



## Color

(K)...Black Type



Color	Areas
(K)	[E].....All European areas except United Kingdom.
(K)	[EK].....United Kingdom.
(K)	[EH].....Holland.
(K)	[EG].....F.R. Germany.
(K)	[XA].....Asia, Latin America, Middle East and Africa.
(K)	[XL].....Australia.
(K)	[XB].....Saudi Arabia.

## SPECIFICATIONS

<b>Deck system</b>	Stereo cassette deck
<b>Track system</b>	4-track, 2-channel
<b>Heads</b>	
<b>(DECK A) REC/PLAY</b>	Solid permaloy head
<b>Erasing</b>	Double-gap ferrite head
<b>(DECK B) PLAY</b>	Solid permaloy head
<b>Erasing</b>	Double-gap ferrite head
<b>Motors</b>	
<b>(DECK A) Capstan/reel table drive</b>	2 speed electronically controlled DC motor
<b>(DECK B) Capstan/reel table drive</b>	2 speed electronically controlled DC motor
<b>Recording system</b>	AC bias
<b>Bias frequency</b>	77 kHz
<b>Erasing system</b>	AC erase
<b>Tape speed</b>	4.8 cm/sec. (1-7/8 ips.)
<b>Frequency response</b>	
<b>METAL</b>	30 Hz~18 kHz (±15 dB) 40 Hz~17 kHz (DIN)
<b>CrO<sub>2</sub></b>	30 Hz~17 kHz (±15 dB) 40 Hz~16 kHz (DIN)
<b>NORMAL</b>	30 Hz~16 kHz (±15 dB) 40 Hz~15 kHz (DIN)

<b>S/N</b>	(signal level = max. recording level, CrO <sub>2</sub> type tape)
<b>DOLBY C NR on</b>	74 dB (CCIR)
<b>DOLBY B NR on</b>	66 dB (CCIR)
<b>DOLBY NR off</b>	56 dB (A weighted)
<b>Wow and flutter</b>	0.07% (WRMS), ±0.2% (DIN)
<b>Fast Forward and Rewind Time</b>	Approx. 95 seconds with C-60 cassette tape
<b>Input sensitivity and impedance</b>	
<b>LINE</b>	60 mV/47 kΩ
<b>Output voltage and impedance</b>	
<b>LINE</b>	400 mV/1.5 kΩ
<b>Power consumption</b>	22 W
<b>Power supply</b>	
<b>For Continental Europe</b>	AC 220 V, 50 Hz/60 Hz
<b>For Others</b>	AC 110 V/127 V/220 V/240 V, 50 Hz/60 Hz
<b>Dimensions (W × H × D)</b>	360 × 128 × 296 mm
<b>Weight</b>	5.1 kg

\*Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.  
"Dolby" and the double-D symbol are trade marks of Dolby Laboratories Licensing Corporation.

# Technics

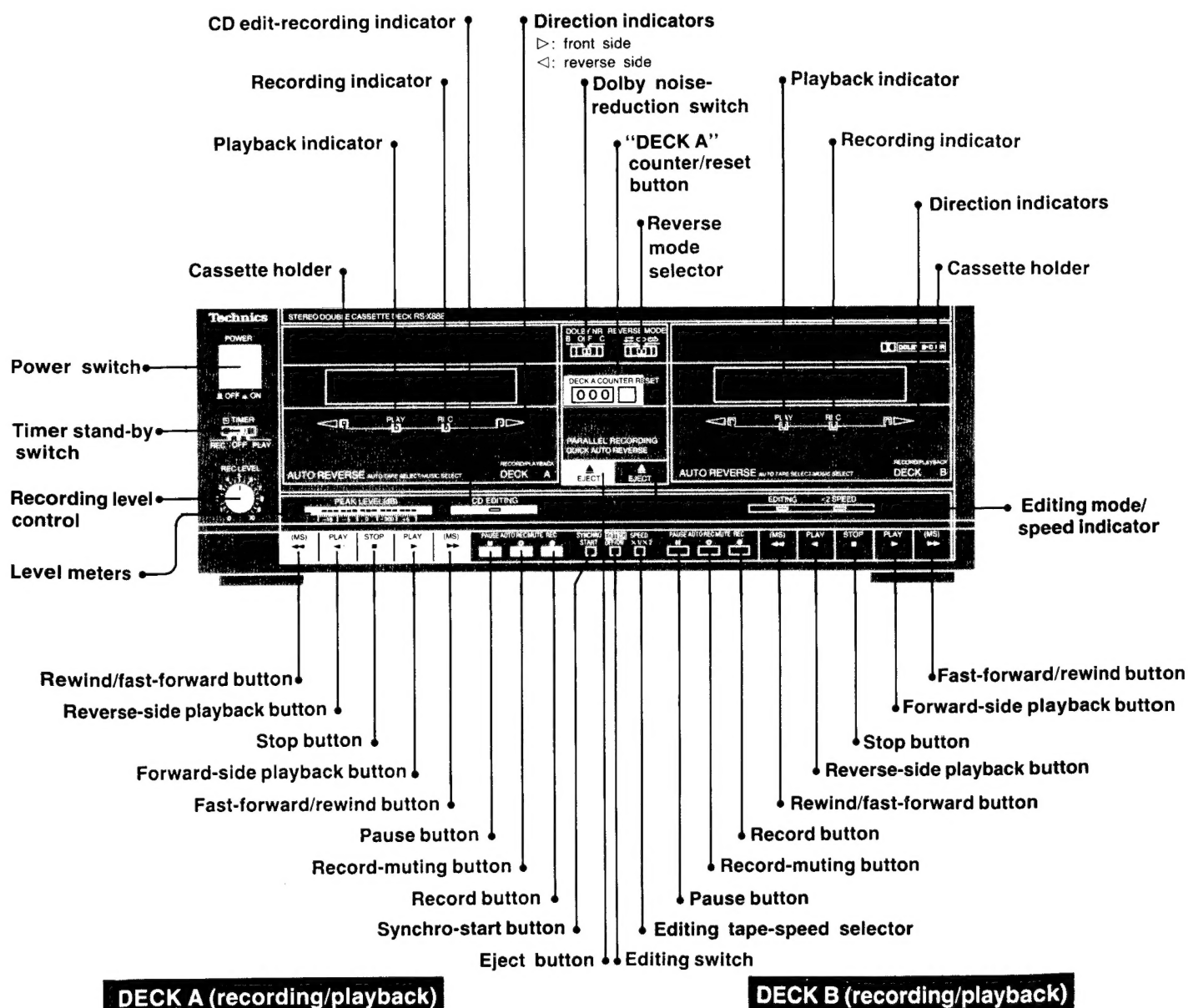
**Matsushita Electric Trading Co., Ltd.**  
P.O. Box 288, Central Osaka Japan

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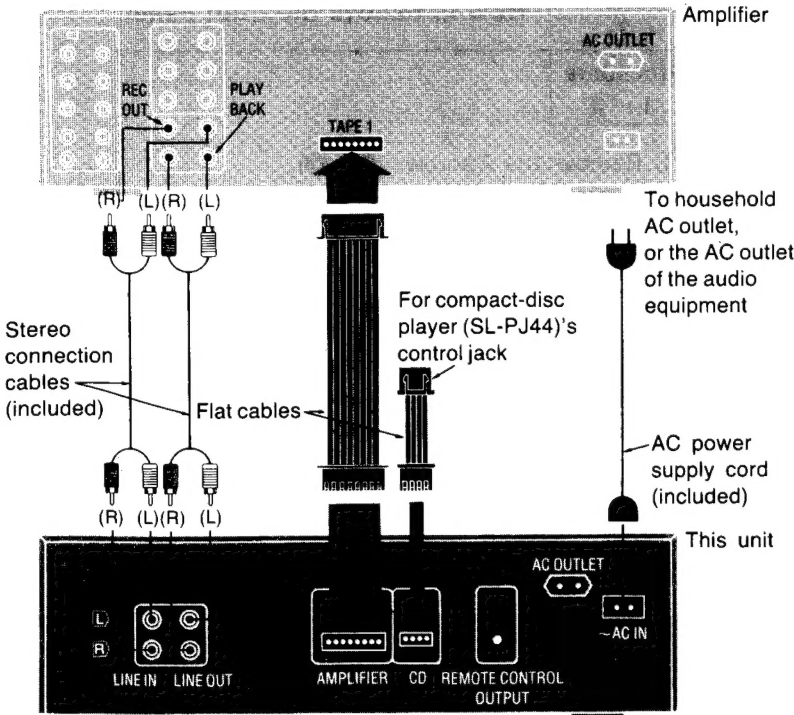
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## ■ LOCATION OF CONTROLS



# HOW TO CONNECTION



The configuration of the AC outlet and AC power supply cord differs according to area.

## Notes:

### Remote control output terminal:

This terminal can be used only with Technics graphic equalizer or compact disc player having a remote control terminal for a tape deck.  
(Refer to the operating instructions of the amplifier.)

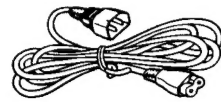
### AC outlet

Do not exceed the indicated power rating when connecting to this outlet.

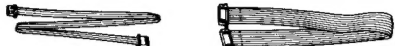
\*(For Technics amplifier model SU-X880, SU-X860 only.)

# ACCESSORIES

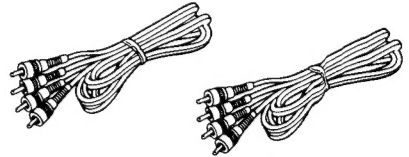
- AC power supply cord ..... 1
- Flat cables for remote control ..... 2
- Stereo connection cables ..... 2



( SFDAC05E03 [E, EG, EH]  
SJA168-1 [XA]  
SJA173 [XL]  
SJA183 [XB]  
SJA188 [EK]



( SWKSX888-KE  
SWKSX888-KE1

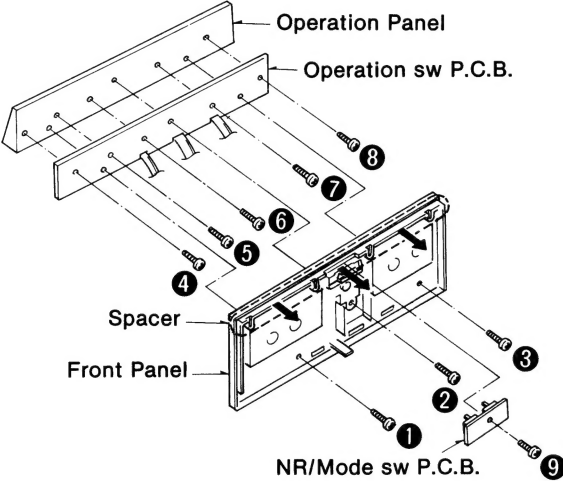
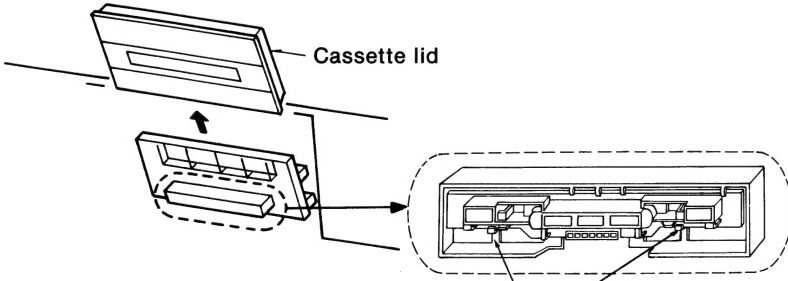


( SJP2264  
SJKP2202

## ■ DISASSEMBLY INSTRUCTIONS

<b>Ref. No.</b> 1	<b>How to remove the cabinet</b>	<b>Ref. No.</b> 3	<b>How to remove the front panel</b>
<b>Procedure</b> 1	• Remove the 6 screws.	<b>Procedure</b> 1 → 3	
<b>Ref. No.</b> 2	<b>How to remove the main P.C.B.</b>	<div data-bbox="835 398 1219 526"> <ol style="list-style-type: none"> <li>1. Remove the 7 screws (①~⑦).</li> <li>2. Remove the spring.</li> <li>3. Push the Eject button, and then remove the front panel.</li> </ol> </div> <div data-bbox="835 537 1317 985"> <p><b>NOTE:</b> If the mechanism stops in play state while the tape is running, the head PCB is lifted and stuck, and the cassette lid will not open if the eject button is pressed. In such a case, turn the main gear by head, or apply a DC 12V power directly to capstan motor ⊕ and ⊖ terminals from the power supply jig (SZZA1047F). Then the head PCB is lowered, and the mechanism comes into stop state, so that eject operation is enabled.</p> </div> <div data-bbox="172 828 744 1377"> <p>Rear Panel Main P.C.B.</p> </div> <div data-bbox="423 1400 501 1444"> <p>Fig. 1</p> </div> <div data-bbox="901 996 1403 1556"> <p>Front Panel Spring</p> </div> <div data-bbox="1097 1512 1176 1556"> <p>Fig. 2</p> </div>	
<b>Ref. No.</b> 4	<b>How to remove the mechanism unit</b>		
<b>Procedure</b> 1 → 3 → 4			
<div data-bbox="133 1742 619 1971"> <ol style="list-style-type: none"> <li>1. Remove the 10 screws (①~⑩).</li> <li>2. Remove the Counter belt (for DECK A).</li> <li>3. Remove the Springs.</li> <li>4. Push the Eject button.</li> <li>5. Remove the Mechanism (DECK A, B) in the direction of arrow.</li> </ol> </div>		<div data-bbox="682 1579 1489 2060"> </div>	



<b>Ref. No.</b> 5	<b>How to remove the timer sw P.C.B. and VR P.C.B.</b>
<b>Procedure</b> 1 → 5	<ol style="list-style-type: none"> <li>1. Remove the one screw (①), and then remove the Timer sw P.C.B. (See Fig. 3).</li> <li>2. Remove the VR knob (See Fig. 3).</li> <li>3. Remove the 2 screws (②, ③), and then remove the VR P.C.B. (See Fig. 3).</li> </ol>
<b>Ref. No.</b> 6	<b>How to remove the operation sw P.C.B. and NR/Mode sw P.C.B.</b>
<b>Procedure</b> 1 → 3 → 4 → 6	<ol style="list-style-type: none"> <li>1. Remove the 3 screws (①~③), and then remove the Operation panel.</li> <li>2. Remove the 5 screws (④~⑧), and then remove the Operation sw P.C.B.</li> <li>3. Remove the Spacer in the direction of arrow.</li> <li>4. Remove the one screw (⑨), and then remove the NR/Mode sw P.C.B.</li> </ol>
	 <p>Fig. 4</p>
<b>Ref. No.</b> 7	<b>How to remove the LED P.C.B.</b>
<b>Procedure</b> 7	<ol style="list-style-type: none"> <li>1. Push the Eject button.</li> <li>2. Remove the Cassette lid.</li> <li>3. Push down the 2 Tabs aside, and then remove the LED P.C.B.</li> </ol>
	 <p>Fig. 5</p>

## MEASUREMENT AND ADJUSTMENT METHODES

### Measurement Condition

- Input level controls; Maximum
- Editing switch; Off
- Noise reduction select switch; Off
- Editing tape speed switch; X1
- Timer start switch; Off

- Reverse mode selector; ⇄
- Make sure heads are clean
- Make sure capstan and pressure roller are clean
- Judgeable room temperature 20±5° C (68±9° F)

### Measuring instrument

- EVM (Electronic Voltmeter)
- Oscilloscope
- Digital frequency counter
- AF oscillator

- ATT (Attenuator)
- DC voltmeter
- Resistor (600Ω)

### Test tape

- Head azimuth adjustment (8kHz, -20dB); QZZCFM
- Tape speed adjustment (3kHz, -10dB); QZZCWAT
- Playback frequency response (315Hz, 12.5kHz, 10kHz, 8kHz, 4kHz, 1kHz, 250kHz, 125kHz, 63kHz, -20dB); QZZCFM

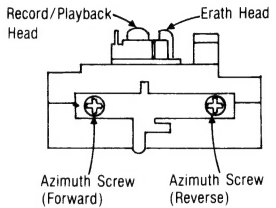
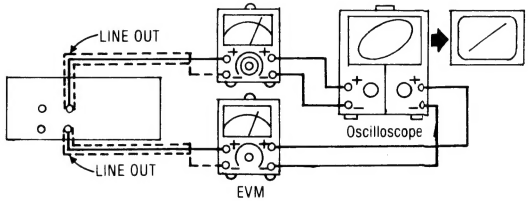
- Playback gain adjustment (315Hz, 0dB); QZZCFM
- Overall frequency response, Overall gain adjustment Normal reference blank tape; QZZCRA
- CrO<sub>2</sub> reference blank tape; QZZCRX
- Metal reference blank tape; QZZCRZ

### HEAD AZIMUTH ADJUSTMENT

1. Playback the azimuth adjusted part (8kHz, -20dB) of the test tape (QZZCFM) and regulate the angle adjusting screw so that the outputs of L-CH and R-CH are maximized. (When the adjusting positions are different with L-CH and R-CH, find a position where the L-CH and R-CH are balanced, and then make the adjustment.)
2. At the same time, draw a lissajous waveform and eliminate phase deflection.
3. Perform the same adjustment in reverse play mode.

#### Forward and reverse rotation level difference check

4. Playback the playback gain adjusted part (315Hz, 0dB) of the test tape (QZZCFM), and then check that the forward and reverse rotation level difference is within 1dB.
5. After the adjustment apply screw-lock to the angle adjusting screw.



### TAPE SPEED ADJUSTMENT (DECK A, B)

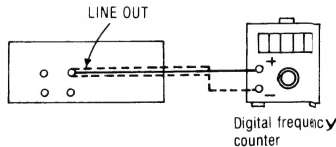
#### High speed

1. Set the editing tape speed switch to "X2" and ground the Deck B=TP3 and Deck A=TP4.
2. Playback the middle part of the test tape (QZZCWAT).
3. Adjust Deck B=VR803 and Deck A=VR804 so that the output is within the standard.

#### Normal speed

4. Set the editing tape speed switch to "X1" and open the Deck B=TP3 and Deck A=TP4.
5. Playback the middle part of the test tape (QZZCWAT).
6. Adjust Deck B=VR801 and Deck A=VR802 so that the output is within the standard.

Standard value: 3000±15 Hz (Normal), 6000±30 Hz (High)



### PLAYBACK FREQUENCY RESPONSE

1. Playback the playback frequency response part (315Hz, 12.5kHz~63Hz, -20dB) of the test tape (QZZCFM).
2. Check that the frequency is within the range shown in Fig. 1 for both L-CH and R-CH.

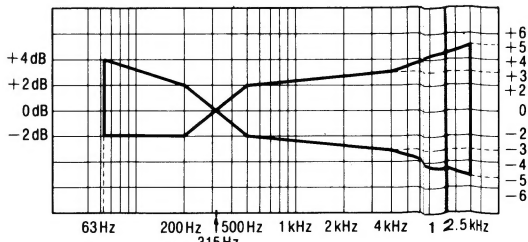
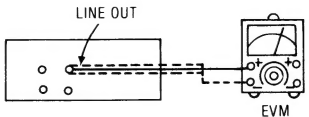
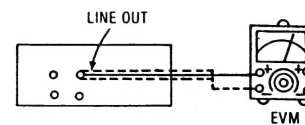


Fig. 1

## PLAYBACK GAIN ADJUSTMENT (DECK A, B)

1. Playback the playback gain adjusted part (315Hz, 0dB) of the test tape (QZZCFM).
2. Adjust Deck B=VR1 (L-CH) [[VR2 (R-CH)]] and Deck A=VR3 (L-CH) [[VR4 (R-CH)]] so that the output is within the standard.

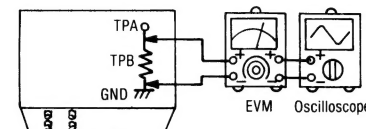
Standard value:  $0.4V \pm 0.5dB$



## ERASE CURRENT ADJUSTMENT (DECK A, B)

1. Insert a metal tape.
2. Press the record and pause buttons.
3. Adjust VR301 (DECK B) [[VR302 (DECK A)]] so that the output between TP1 (DECK B) [[TP2 (DECK A)]] and ground is within the standard.

Standard value:  $170 \pm 5mA$  (Metal) ( $170 \pm 5mV$ )



• TPA: TP1 (DECK B), TP2 (DECK A)  
TPB: VR301 (DECK B), VR302 (DECK A)

## OVERALL FREQUENCY RESPONSE (DECK A, B)

1. Set a normal blank tape (QZZCRA) and record by applying signal (50Hz~12.5kHz, 20dB attenuated from the reference input level signal (1kHz, -24dB)).
2. Playback the signal recorded in step 1, and check that the level of each output frequency is within the range shown in Fig. 2 in comparison with the reference frequency (1kHz).
3. If it is not within the standard range, adjust the bias current by Deck B=VR9 (L-CH) and Deck A=11 (L-CH) [[Deck B=VR10 (R-CH) and Deck A=VR12 (R-CH)]] so that the frequency level is within the standard.
  - Level up in high frequency range ... Increase the bias current.
  - Level down in high frequency range ... Decrease the bias current.
4. After that, increase the signal recorded on CrO<sub>2</sub> blank tape (QZZCRX) and metal blank tape (QZZCRZ) up to 14kHz and adjust in the same way as mentioned above and check that the frequency level is within the range shown in Fig. 3.

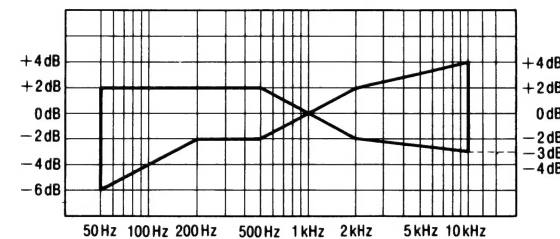


Fig. 2

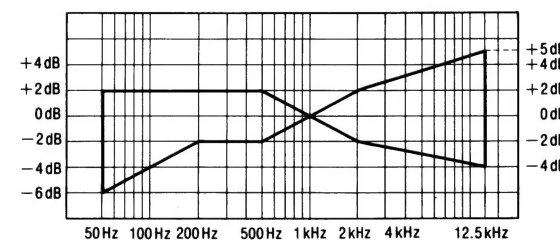
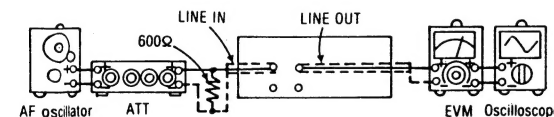


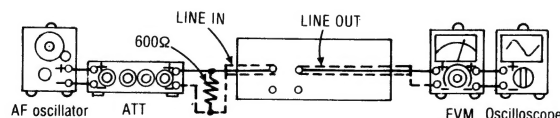
Fig. 3



## OVERALL GAIN ADJUSTMENT (DECK A, B)

1. Set a normal blank tape (QZZCRA) and apply the reference input level signal (1kHz, -24dB) in record pause mode.
2. Adjust the output 0.4V by attenuator and then record.
3. Playback the signal recorded in step 2, and check that the output is within the standard.
4. If it is not within the standard, adjust Deck B=VR5 (L-CH) and Deck A=VR7 (L-CH) [[Deck B=VR6 (R-CH) and Deck A=VR8 (R-CH)]] and repeat the step (1), (2) and (3) until the output is within the standard.

Standard value:  $0V \pm 0.5dB$



## DOLBY NR CIRCUIT

1. Set a normal tape and apply 1kHz signal in record pause mode.
2. Adjust by attenuator so that the output between terminal 7 of IC401 (L-CH) [[IC402 (R-CH)]] and ground is 12.3mV.

### —Dolby B (Encode characteristic)—

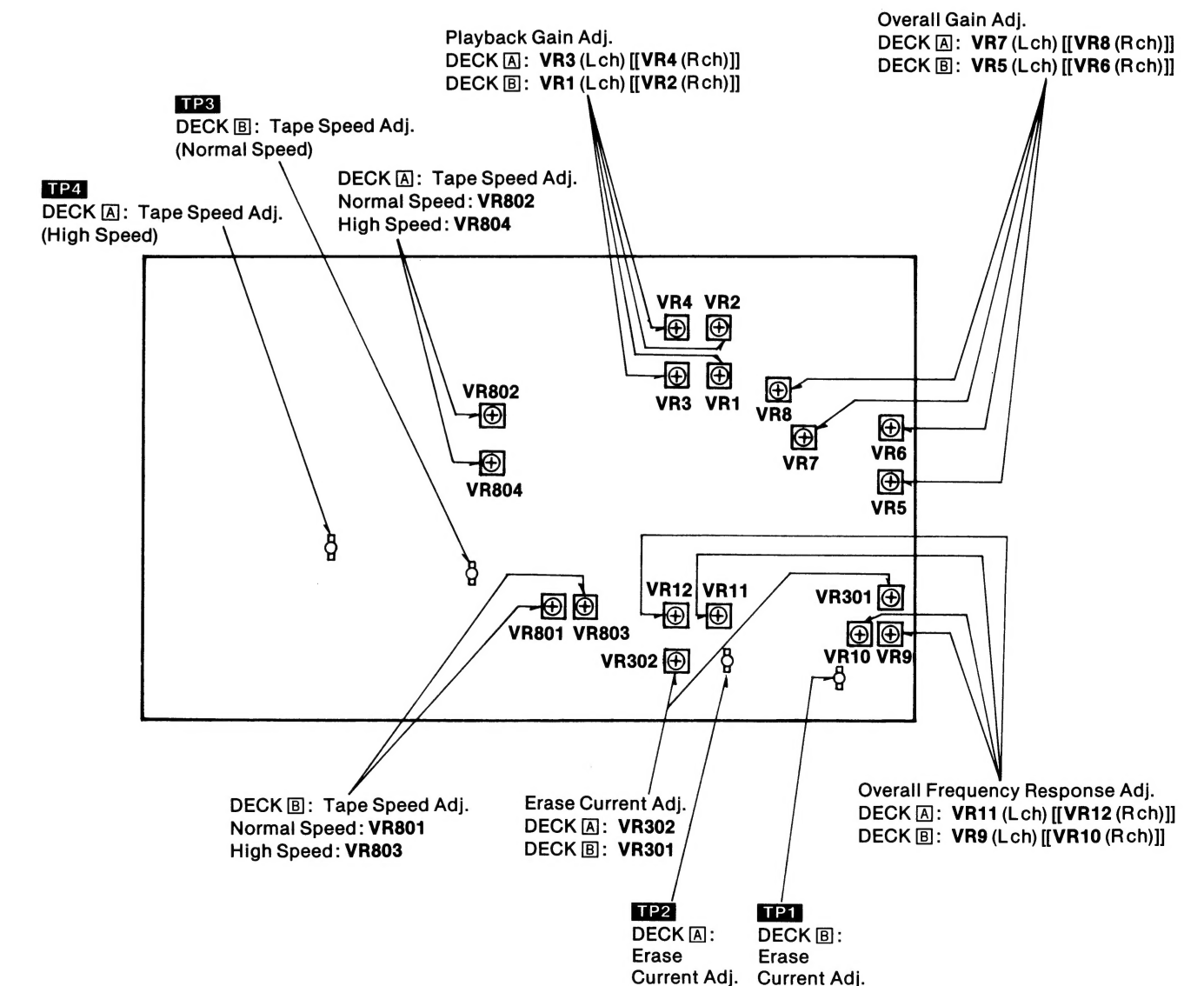
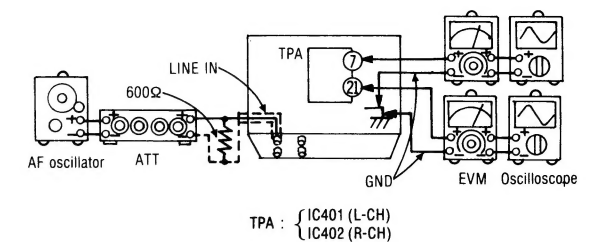
3. Set NR switch to "Dolby B" and change the input signal to 1kHz, 5kHz.
4. Check that the output between terminal 21 of IC401 (L-CH) [[IC402 (R-CH)]] and ground change as specified from the level in NR out mode.

Standard value:  $6 \pm 2.5dB$  (1kHz),  $8 \pm 2.5dB$  (5kHz)

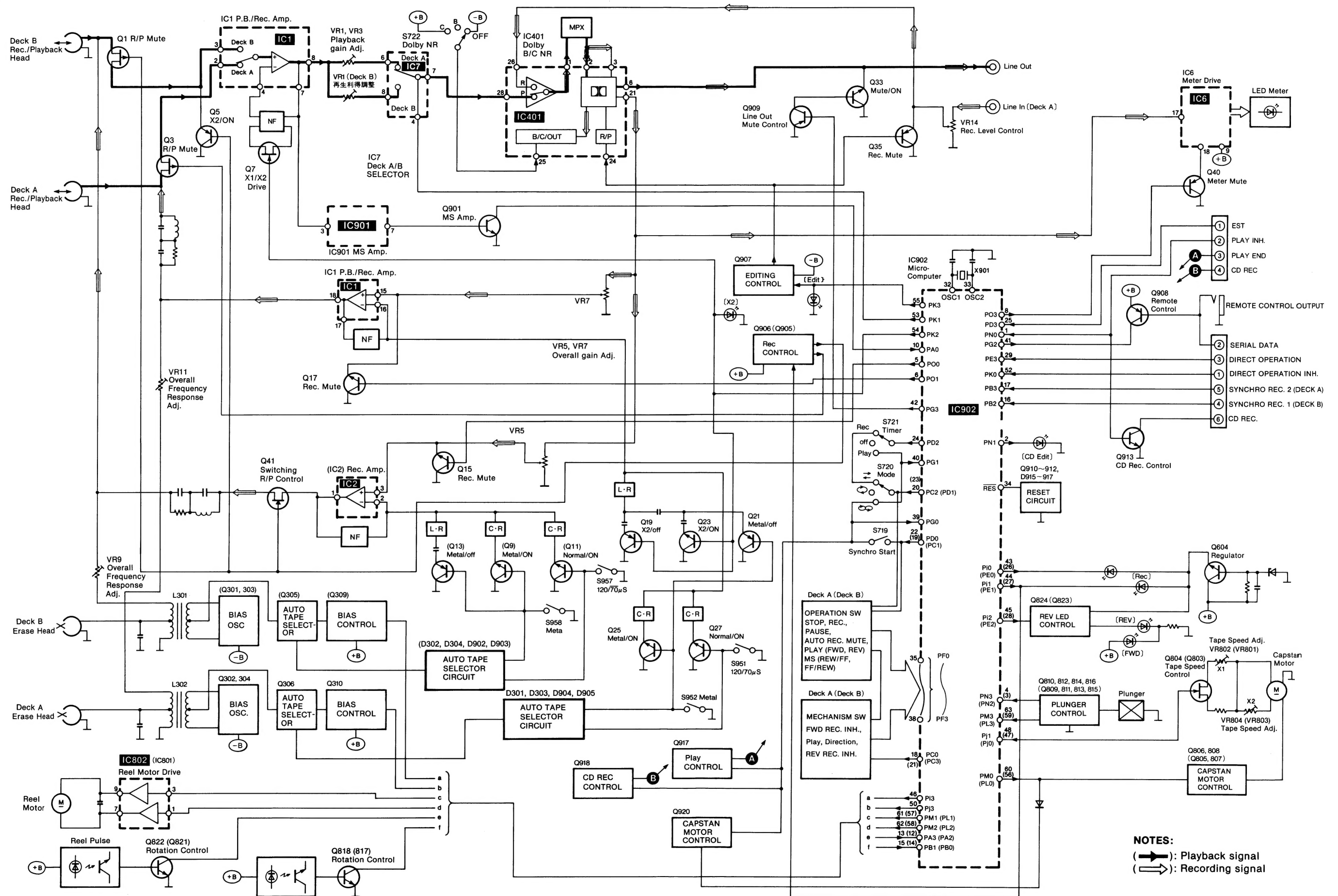
### —Dolby C (Encode characteristic)—

5. Set NR switch to "Dolby C" and change the input signal to 1kHz, 5kHz.
6. Check that the output between terminal 21 of IC401 (L-CH) [[IC402 (R-CH)]] and ground change as specified from the level in NR out mode.

Standard value:  $11.5 \pm 2.5dB$  (1kHz),  $8.5 \pm 2.5dB$  (5kHz)

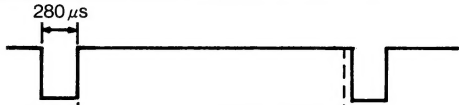
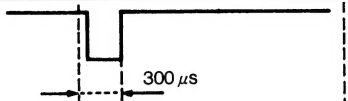
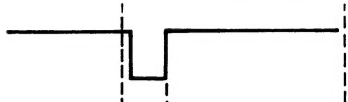

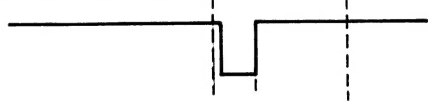
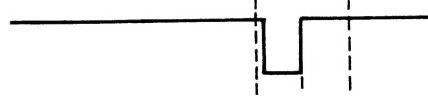
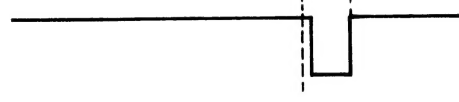
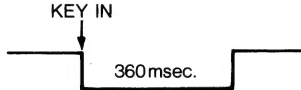


## BLOCK DIAGRAM



## ■ MICROCOMPUTER TERMINAL FUNCTION AND WAVEFORM IC902 (LC6554D-3299)

Terminal No.	Symbol	Function/Operation
1	PN0	•“H” in CD editing rec mode, and “L” in other mode.
2	PN1	CD editing LED •Light up only in CD editing rec mode. •When CD editing LED light up, the level goes “H”.
3	PN2	•“H” in Deck B MS search mode.
4	PN3	•“H” in Deck A MS search mode.
5	PO0	Deck B Rec Mute control •“H” in Stop, FF, REW and Play mode. •When Auto Rec Mute button is pressed in Rec Pause mode, the level changes from “L” to “H”, and changes to “L” with the button released. •When Auto Rec Mute button is pressed in Rec Play mode, the level goes “H”. It changes to “L” 4.0sec. later in normal speed mode, and 2.5sec. later in high speed mode.
6	PO1	Deck A Rec Mute control •“H” in Stop, FF, REW and Play mode. •When Auto Rec Mute button is pressed in Rec Pause mode, the level changes from “L” to “H”, and changes to “L” with the button released. •When Auto Rec Mute button is pressed in Rec Play mode, the level goes “H”. It changes to “L” 4.0sec. later in normal speed mode, and 2.5sec. later in high speed mode.
7	PO2	•Non connection.
8	PO3	Deck A Meter Mute control •“H” in Stop, FF and REW mode. •In Rec Pause, Rec Play mode, “H” only in PO0 is “H” level.
9	PP0	•Non connection.
10	PA0	Non signal input •It goes “H” in non signal MS search mode.
11	PA1	•Power off detection
12	PA2	Deck B Reel table Pulse input •The rotation of reel table is detected by photo sensor.
13	PA3	Deck A Reel table Pulse input •The rotation of reel table is detected by photo sensor.
14	PB0	Deck B Leader tape detection input •“L” level pulses are generated between the leader tape section and the magnetic section. (approx. 100sec.)
15	PB1	Deck A Leader tape detection input •“L” level pulses are generated between the leader tape section and the magnetic section. (approx. 100sec.)
16	PB2	Deck B Synchro rec detection •“L” in CD Play mode, and “H” in other mode.
17	PB3	Deck A Synchro rec detection •“L” in CD Play mode, and “H” in other mode.

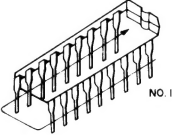
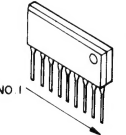
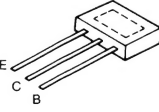
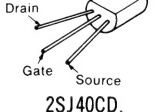
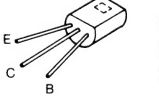
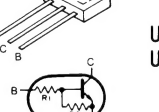
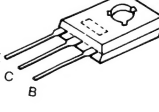
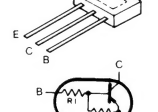
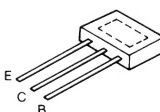
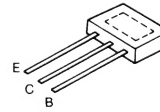
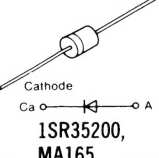
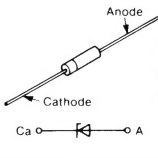
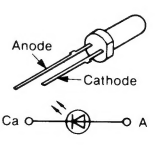
Terminal No.	Symbol	Function/Operation
18	PC0	Scan output 
19	PC1	
20	PC2	
21	PC3	
22	PD0	
23	PD1	
24	PD2	
25	PD3	End of tape detection •“L” in end of tape detected, and “H” in reverse mode.
26	PE0	Deck B Play control •“L” in Play and Rec Play mode. •In Pause, Rec Pause and MS search mode, the level goes “H” ⇄ “L”.
27	PE1	Deck B Rec control •“L” in Rec Pause and Rec Play mode.
28	PE2	Deck B Reverse control •“L” only in Reverse mode.
29	PE3	Direct operation 
30	TEST	Test terminal •Used for microcomputer test, and usually connected to Ground.
31	V <sub>SS</sub>	GND terminal •Connection to Ground.
32	OSC1	Clock OSC terminal •About 1.7V DC, but microcomputer does not work with probe connected.
33	OSC2	Clock OSC terminal •Oscillation at about 3MHz.
34	$\overline{\text{RES}}$	Reset terminal •Used for microcomputer reset, and the level goes “H”.
35	PF0	Input switch stage reading with scan output •Input of Deck A, B, forward rec inhibit switch, forward REW switch (◀◀) and auto rec mute switch.



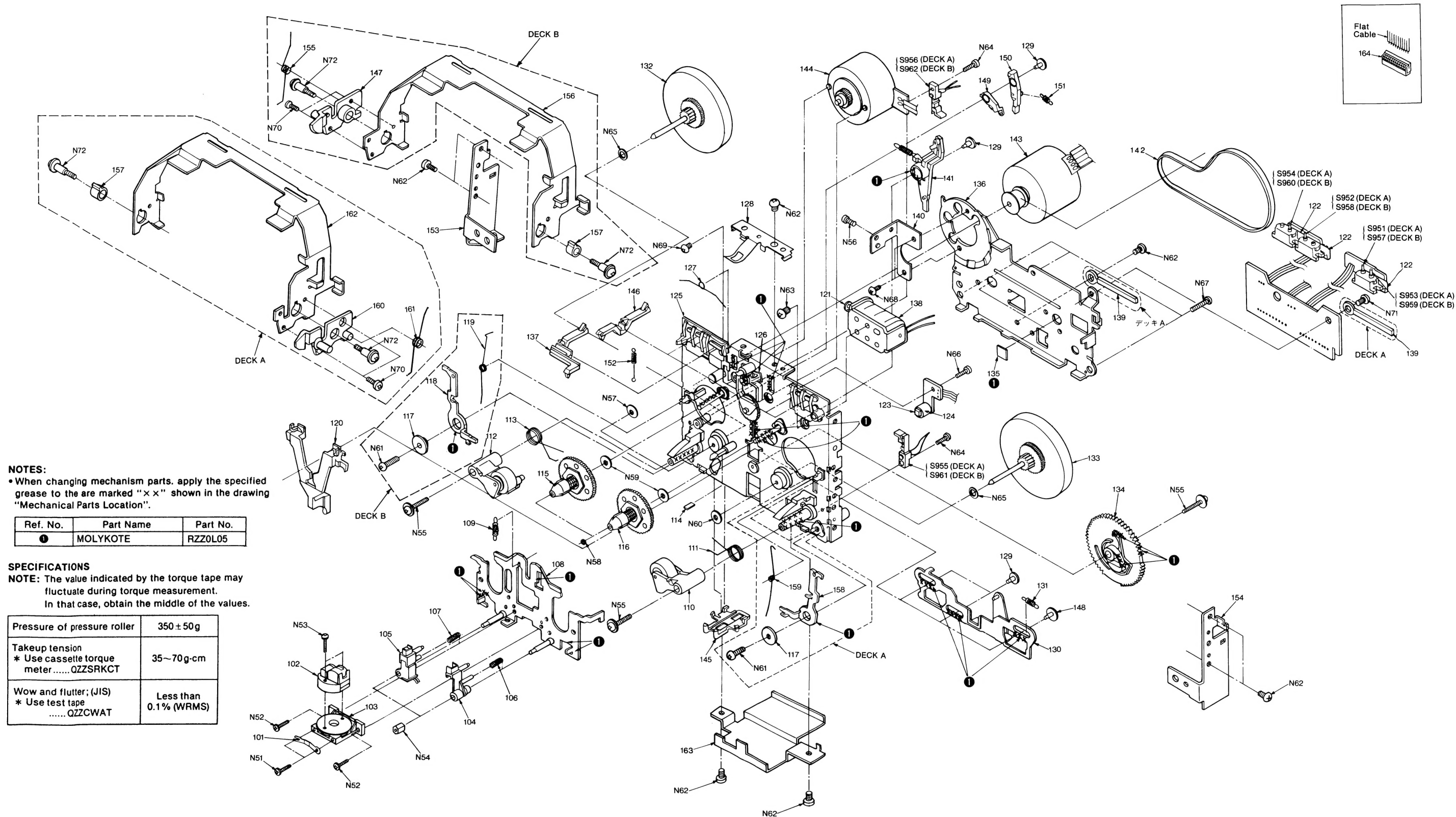
Terminal No.	Symbol	Function/Operation
36	PF1	Input switch stage reading with scan output •Input of Deck A, B, Reverse rec inhibit switch, forward FF switch (▶▶) and Pause switch.
37	PF2	Input switch stage reading •Input of Deck A, B, Play switch, Reverse Play switch (◀) and Rec switch.
38	PF3	Input switch stage reading •Input of Deck A, B, Direction switch, forward Play switch (▶), stop switch.
39	PG0	Input switch stage reading •Input of Synchro start switch, Reverse mode switch (↔), CD Editing switch and Timer rec switch.
40	PG1	Input switch stage reading •Input of Editing switch, Reverse mode switch (↔), ×1/×2 Editing speed selector switch, Play end and Timer Play switch.
41	PG2	Remote control data input
42	PG3	Line out Mute control output •“H” in Play mode.
43	Pi0	Deck A Play control •“L” in Play and Rec Play mode. •In Pause, Rec Pause and MS search mode, the level goes “H” ↔ “L”.
44	Pi1	Deck A Rec control •“L” in Rec Pause and Rec Play mode.
45	Pi2	Deck A Reverse mode control •“L” only in Deck A Reverse mode.
46	Pi3	Deck B Bias OSC control •“L” in Deck B Rec Play mode.
47	Pj0	Deck B Tape speed control •“L” only in high speed (×2).
48	Pj1	Deck A Tape speed control •“L” only in high speed (×2).
49	Pj2	Muting control •“H” in Play, Rec and Editing rec mode.
50	Pj3	Deck A Bias OSC control •“L” in Deck A Rec Play.
51	Vp	Power supply terminal for Pull Down Resistor.
52	PK0	Direct operation inhibit output •“H” in Rec Pause or Rec Play mode.
53	PK1	Deck A Play control •“H” only in Deck A Play mode.
54	PK2	Editing speed control •“H” only in ×2 Editing mode.
55	PK3	Editing mode control •“H” only in Editing mode.
56	PL0	Deck B Capstan motor control •“H” only in Deck B Play and Rec Play mode.
57	PL1	Deck B Forward FF/REW motor control •“H” only in Deck B Forward Play FF mode.

Terminal No.	Symbol	Function/Operation
58	PL2	Deck B Reverse FF/REW motor control •“H” only in Deck B Reverse Play REW mode.
59	PL3	Deck B Play plunger control •When mechanism mode is changed over, the level goes “H” for short time.
60	PM0	Deck A Capstan motor control •“H” only in Deck A Play and Rec Play mode.
61	PM1	Deck A Forward FF/REW motor control •“H” only in Deck A Forward Play FF mode.
62	PM2	Deck A Reverse FF/REW motor control •“H” only in Deck A Reverse Play FF mode.
63	PM3	Deck A Play plunger control •When mechanism mode is changed over, the level goes “H” for short time.
64	V <sub>DD</sub>	Power supply terminal •Operative on 4.5~5.5 volts.

## ■ TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

 AN6888 18 Pin AN7016K 30 Pin LC6554D-3299 64 Pin TEA0665 28 Pin		 M5218L 8 Pin MN6634 9 Pin BA6218 9 Pin	
 2SA1309A-R, 2SD1330R, 2SA1253-S, 2SB1030Q, 2SC3311-Q	 2SJ40CD, 2SK381	 2SD592NC-R, 2SB621A-R, 2SA885Q	 UN4213, UN4211
 2SC1846-R	 UN4111 UN4113	 UN4116, UN4115	 UN4215
 1SR35200, MA165	 MA4047H, MA4120, MA4091-M, MA4062-M, MA4043M	 LN29RCPP RED LN39GCPP GREEN LN89RCPP RED	

MECHANICAL PARTS LOCATION



**NOTES:**  
• When changing mechanism parts, apply the specified grease to the are marked "x" shown in the drawing "Mechanical Parts Location".

Ref. No.	Part Name	Part No.
①	MOLYKOTE	RZZ0L05

**SPECIFICATIONS**  
**NOTE:** The value indicated by the torque tape may fluctuate during torque measurement.  
In that case, obtain the middle of the values.

Pressure of pressure roller	350 ± 50g
Takeup tension * Use cassette torque meter.....QZSRKCT	35~70g-cm
Wow and flutter; (JIS) * Use test tape .....QZCWAT	Less than 0.1% (WRMS)

## REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Code	Description	Ref. No.	Part No.	Part Code	Description
CASSETTE DECK				145	SMQA1076	016 631 0055 3	FRAME,HOLDER
101	SMQA1094	016 726 0887 5	COIL SPRING	146	SMQA1025	016 718 3349 0	LEVER
102	SMQA1045	001 270 1745 8	MAGNETIC HEAD	147	SMQA1129	016 712 0357 2	ROD
103	SMQA1090	016 630 1782 0	PLATE	148	SMQA1079	016 640 0487 2	CAP
104	SMQA1047	016 641 0257 9	GUIDE	149	SMQA1080	016 717 0258 9	ARM
105	SMQA1048	001 036 0036 2	PHOTO ELECTRIC TRANSDUCER	150	SMQA1081	016 717 0259 8	ARM
106	SMQA1049	016 726 0878 6	COIL SPRING	151	SMQA1082	016 726 0884 8	COIL SPRING
107	SMQA1050	016 726 0879 5	COIL SPRING	152	SMQA1083	016 726 0886 6	COIL SPRING
108	SMQA1051	016 630 1779 5	PLATE	153	SMQA1127	016 632 1867 6	ANGLE
109	SMQA1004	016 726 0826 8	SPRING	154	SMQA1128	016 632 1865 8	ANGLE
110	SMQA1005	016 740 0114 1	ROLLER	155	SMQA1133	016 726 0935 4	COIL SPRING
111	SMQA1006	016 726 0825 9	SPRING	156	SMQA1131	016 718 3378 5	LEVER
112	SMQA1052	016 740 0121 2	ROLLER	157	SMQA1135	016 643 1021 3	SPACER
113	SMQA1053	016 726 0880 2	COIL SPRING	158	SMQA1119	016 717 0262 3	ARM
114	SMQA1054	016 630 1780 2	PLATE	159	SMQA1120	016 726 0933 6	COIL SPRING
115	SMQA1013	016 913 0004 5	REEL	160	SMQA1130	016 712 0356 3	ROD
116	SMQA1026	016 913 0003 6	REEL	161	SMQA1134	016 726 0934 5	COIL SPRING
117	SMQA1009	016 643 0966 7	SPACER	162	SMQA1132	016 718 3377 6	LEVER
118	SMQA1055	016 717 0257 0	ARM	163	SMQA1137	016 601 0614 2	SHIELD PLATE
119	SMQA1012	016 726 0835 7	SPRING	164	SJT30640LX-V	003 410 6149 8	CONNECTOR
120	SMQA1056	016 718 3358 9	LEVER	164	SJT30640LX-V	003 410 5998 9	LUG TERMINAL
121	SMQA1057	016 713 0364 8	SHAFT	164	SJT30940LX-V	003 410 6150 5	LUG TERMINAL
122	SMQA1021	016 643 0965 8	SPACER	SCREWS,WASHERS & NUTS			
123	SMQA1041	001 035 0392 0	PHOTO ELECTRIC TRANSDUCER	N51	SMQA1092	005 500 7744 4	SCREW
124	SMQA1022	016 643 0964 9	SPACER	N52	SMQA1043	005 500 7741 7	SCREW
125	SMQA1122	016 630 1806 9	CHASSIS	N53	SMQA1093	005 500 7745 3	SCREW
126	SMQA1061	016 742 0039 5	IDLER PULLEY	N54	SMQA1046	005 507 1969 8	NUT
127	SMQA1024	016 726 0834 8	SPRING	N55	XTN2+13C	005 501 3505 8	TAPPING SCREW
128	SMQA1062	016 726 0881 1	COIL SPRING	N56	XTS3+6B	005 501 0697 7	SCREW
129	SMQA1029	016 640 0459 6	CAP	N57	SMQA1091	016 862 1061 4	INDICATION PLATE,LABEL
130	SMQA1063	016 630 1783 9	PLATE	N58	SMQA1010	016 765 0056 7	REEL TABLE
131	SMQA1064	016 726 0882 0	COIL SPRING	N59	SMQA1014	016 641 0246 2	SLIDER
132	SMQA1066	016 756 0085 3	WHEEL	N60	SMQA1007	016 862 1041 8	INDICATION PLATE,LABEL
133	SMQA1096	016 756 0086 2	WHEEL	N61	XTN3+10B	005 501 0341 2	SCREW
134	SMQA1123	016 745 0226 9	GEAR	N62	XTN3+4F	005 501 0412 4	TAPPING SCREW
135	SMQA1097	016 643 1004 4	SPACER	N63	XYN26+C3	005 503 0738 5	SCREW
136	SMQA1068	016 650 5303 9	BRACKET	N64	XTN2+7C	005 501 3506 7	TAPPING SCREW
137	SMQA1069	016 718 3359 8	LEVER	N65	SMQA1031	005 513 4185 4	WASHER
138	SMQA1070	003 454 0638 6	PLUNGER	N66	XTN26+6B	005 501 0314 5	SCREW
139	SMQA1071	016 643 0989 0	WASHER	N67	XTN26+8B	005 501 0320 7	TAPPING SCREW
140	SMQA1126	016 650 5351 1	ANGLE	N68	XYN26+C45	005 503 0928 1	SCREW
141	SMQA1073	016 718 3360 5	LEVER	N69	XYN26+C6	005 503 0554 1	SMALL SCREW
142	SMQA1124	016 754 0077 3	ANGULAR BELT	N70	XTS2+4B	005 501 0643 1	SCREW
143	SMQA1125	002 310 2495 4	DC MOTOR	N71	XTN3+5F	005 501 3502 1	TAPPING SCREW
144	SMQA1036	002 310 2270 9	DC MOTOR	N72	SMQA1136	005 500 7943 9	SCREW

## RESISTORS & CAPACITORS

Notes: \* Important safety notice:

Components identified by  $\Delta$  mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

\* Bracketed indications in Ref. No. columns specify the area.

Parts without these indications can be used for all areas.

### Numbering System of Resistor

Example

ERD	25	F	J	102
Type	Wattage	Shape	Tolerance	Value
ERX	2	AN	J	471
Type	Wattage	Shape	Tolerance	Value
				47x10 <sup>1</sup> (ohm)

### Numbering System of Capacitor

Example

ECKD	1H	102	Z	F
Type	Voltage	Value	Tolerance	Peculiarity
ECEA	50		M	330
Type	Voltage		Peculiarity	Value
				(33x10 <sup>0</sup> microfarad)

Resistor Type	Wattage	Tolerance
ERD : Carbon	10 : 1/8W	J : $\pm 5\%$
ERG : Metal Oxide	12 : 1/2W	F : $\pm 1\%$
ERX : Metal Film	25 : 1/4W	G : $\pm 2\%$
ERQ : Fuse Type Metal	1A : 1W	K : $\pm 10\%$
ERD [ ] L : Carbon (chip)	18 : 1/8W	
ERO [ ] K : Metal Film (chip)	S2 : 1/4W	
ERC : Solid	S1 : 1/2W	
	2F : 1/4W	
	50 : 1/2W	
	2A : 2W	

Capacitor Type	Voltage	Tolerance
ECE : Electrolytic	0J : 6.3V	C : $\pm 0.25\text{pF}$
ECCD : Ceramic	1A : 10V	J : $\pm 5\%$
ECKD : Ceramic	1C : 16V	K : $\pm 10\%$
ECQM : Polyester	1E : 25V	Z : $\pm 80\%$
	1H : 50V	-20%
ECQP : Polypropylene	1V : 35V	P : $\pm 100\%$
	50 : 50V	-0%
ECG : Ceramic	05 : 50V	M : $\pm 20\%$
ECEADDON: Non Polar Electrolytic	2H : 500V	
QCU [ ] : Ceramic (Chip Type)	2A : 100V	D : $\pm 0.5\text{pF}$
ECUX : Ceramic (Chip Type)	1 : 100V	G : $\pm 2\%$
ECF : Semiconductor	KC : 400V AC (UL)	
	KC : 125VAC	
	1J : 63V	
EECW : Liquid electrolyte double layer capcitor		

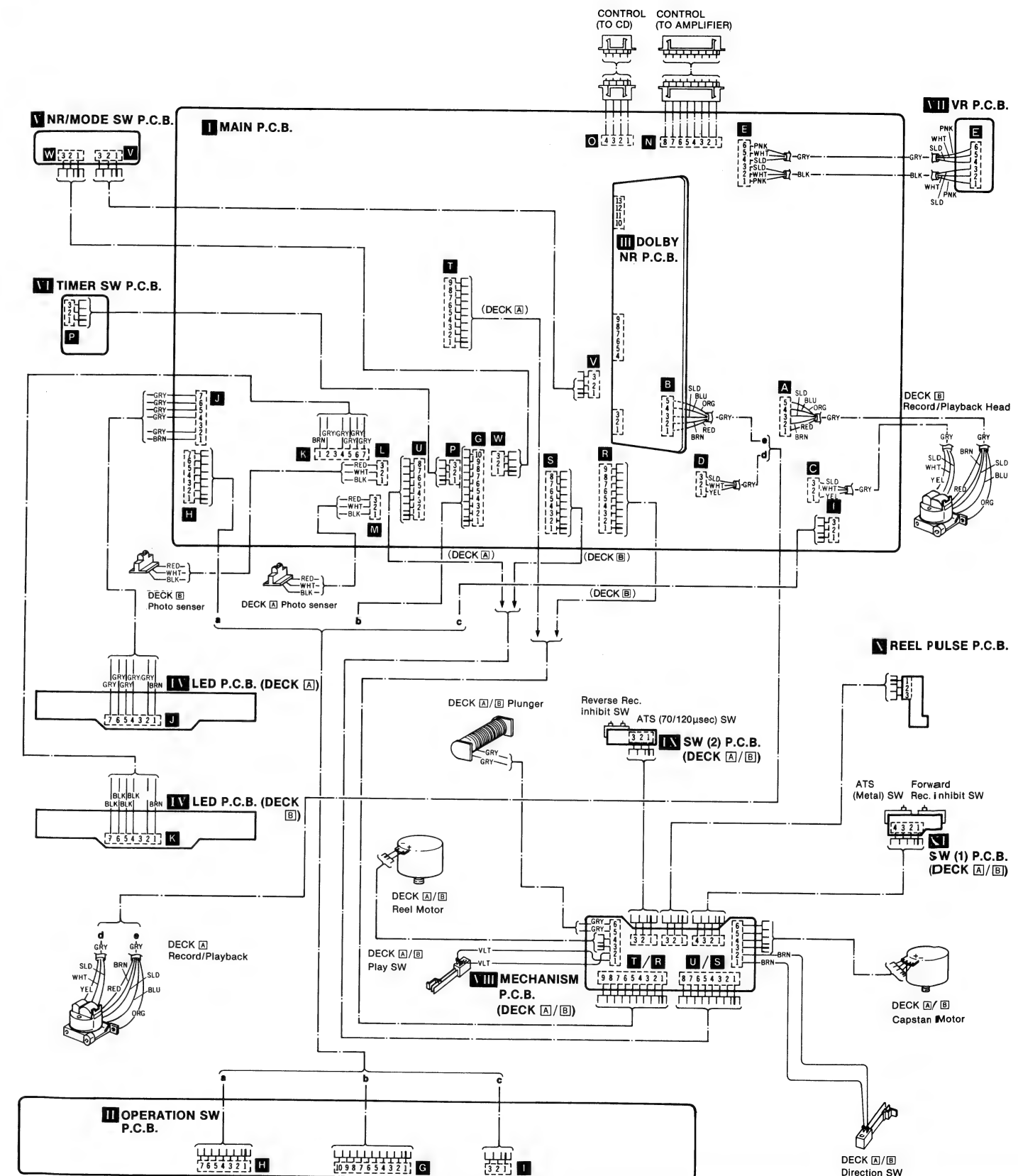
Ref. No.	Part No.	Part Code	Ref. No.	Part No.	Part Code	Ref. No.	Part No.	Part Code
RESISTORS			R107, R108	ERDS2TJ154	001 152 2427 4	EK, XL		
R1, R2	ERDS2TJ101	001 152 2421 0	R111, R112	ERDS2TJ472	001 152 2362 4	R608	ERDS1FJ150	001 152 2617 0
R3, R4	ERDS2TJ101	001 152 2421 0	R113, R114	ERDS2TJ472	001 152 2362 4	E, EG, EH, XA, XB		
R5, R6	ERDS2TJ225	001 152 3149 3	R115, R116	ERDS2TJ272	001 152 2354 4	R609	ERD2FCJ6R8	001 152 2481 8
R7, R8	ERDS2TJ225	001 152 3149 3	R117, R118	ERDS2TJ272	001 152 2354 4	R608	ERD2FCJ6R8	001 152 2481 8
R9, R10	ERDS2TJ101	001 152 2421 0	R301, R302	ERDS2TJ1R0	001 152 2419 4	EK, XL		
R11, R12	ERDS2TJ101	001 152 2421 0	R303	ERDS2TJ473	001 152 2363 3	R609	ERDS2TJ270	001 152 2434 5
R13, R14	ERDS2TJ820	001 152 2453 2	R304	ERDS2TJ683	001 152 2450 5	E, EG, EH, XA, XB, PA, PE		
R15, R16	ERDS2TJ332	001 152 2357 1	R305	ERDS2TJ473	001 152 2363 3	R609	ERD2FCG270	001 152 2725 7
R17, R18	ERDS2TJ272	001 152 2354 4	R306	ERDS2TJ683	001 152 2450 5	EK, XL		
R19, R20	ERDS2TJ152	001 152 2350 8	R307, R308	ERDS2TJ100	001 152 2420 1	R610	ERDS2TJ102	001 152 2346 4
R21, R22	ERDS2TJ272	001 152 2354 4	R309, R310	ERDS2TJ100	001 152 2420 1	R611	ERDS1FJ560	001 152 2635 8
R23, R24	ERDS2TJ223	001 152 2432 7	R311, R312	ERDS2TJ561	001 152 2364 2	EK, XL		
R25, R26	ERDS2TJ472	001 152 2362 4	R313	ERDS2TJ331	001 152 2356 2	R611	ERDS2TJ270	001 152 2434 5
R27, R28	ERDS2TJ183	001 152 2429 2	R314	ERDS2TJ221	001 152 2431 8	E, EG, EH, XA, XB, PA, PE		
R29, R30	ERDS2TJ225	001 152 3149 3	R315	ERDS2TJ222	001 152 2353 5	R612	ERDS1FJ560	001 152 2635 8
R31, R32	ERDS2TJ223	001 152 2432 7	R316	ERDS2TJ391	001 152 2360 6	R612, R613	ERDS2TJ270	001 152 2434 5
R33, R34	ERDS2TJ472	001 152 2362 4	R317, R318	ERDS2TJ683	001 152 2450 5	E, EG, EH, XA, XB, PA, PE		
R35, R36	ERDS2TJ222	001 152 2353 5	R319	ERDS2TJ221	001 152 2431 8	R614	ERDS2TJ270	001 152 2434 5
R37, R38	ERDS2TJ330	001 152 2355 3	R320	ERDS2TJ681	001 152 2449 8	E, EG, EH, XA, XB, PA, PE		
R39, R40	ERDS2TJ472	001 152 2362 4	R321	ERDS2TJ331	001 152 2356 2	R615	ERDS2TJ561	001 152 2364 2
R41, R42	ERDS2TJ223	001 152 2432 7	R322	ERDS2TJ681	001 152 2449 8	R616, R617	ERQ14LKR22	001 190 0625 4
R43, R44	ERDS2TJ102	001 152 2346 4	R401, R402	ERDS2TJ242	001 152 3150 0	EK, XL		
R45, R46	ERDS2TJ332	001 152 2357 1	R403, R404	ERDS2TJ562	001 152 2445 2	R618	ERQ14LKR22	001 190 0625 4
R47, R48	ERDS2TJ472	001 152 2362 4	R405, R406	ERDS2TJ332	001 152 2357 1	EK, XL		
R49, R50	ERDS2TJ332	001 152 2357 1	R407, R408	ERDS2TJ102	001 152 2346 4	R801	ERG1ANJ390	001 151 0066 2
R51, R52	ERDS2TJ472	001 152 2362 4	R409, R410	ERDS2TJ333	001 152 2358 0	E, EG, EH, XA, XB		
R53, R54	ERDS2TJ102	001 152 2346 4	R411, R412	ERDS2TJ823	001 152 2456 9	R801	ERG3ANJ390	001 151 0238 0
R55, R56	ERDS2TJ330	001 152 2355 3	R413, R414	ERDS2TJ471	001 152 2361 5	EK, XL		
R57, R58	ERDS2TJ472	001 152 2362 4	R415, R416	ERDS2TJ512	001 152 2596 8	R802	ERG1ANJ390	001 151 0066 2
R59, R60	ERDS2TJ222	001 152 2353 5	R417, R418	ERDS2TJ683	001 152 2450 5	E, EG, EH, XA, XB		
R61, R62	ERDS2TJ103	001 152 2347 3	R419, R420	ERDS2TJ222	001 152 2353 5	R803, R804	ERDS2TJ391	001 152 2360 6
R63, R64	ERDS2TJ103	001 152 2347 3	R421, R422	ERDS2TJ823	001 152 2456 9	R805, R806	ERDS2TJ225	001 152 3149 3
R65, R66	ERDS2TJ152	001 152 2350 8	R423, R424	ERDS2TJ331	001 152 2356 2	R807, R808	ERDS2TJ103	001 152 2347 3
R67, R68	ERDS2TJ562	001 152 2445 2	R425, R426	ERDS2TJ101	001 152 2421 0			
R69, R70	ERDS2TJ472	001 152 2362 4	R601	ERDS2TJ103	001 152 2347 3			
R73, R74	ERDS2TJ223	001 152 2432 7	R602	ERDS2TJ182	001 152 2352 6			
R77, R78	ERDS2TJ123	001 152 2424 7	R605	ERDS2TJ471	001 152 2361 5			
R81, R82	ERDS2TJ222	001 152 2353 5	R606	ERDS2TJ102	001 152 2346 4			
R84	ERDS2TJ154	001 152 2427 4	R607	ERDS1FJ477	001 152 2631 2			
R86	ERDS2TJ223	001 152 2432 7	E, EG, EH, XA, XB, PA, PE					
R88	ERDS2TJ473	001 152 2363 3	R607	ERQ14LKR27P	001 151			

Ref. No.	Part No.	Part Code	Ref. No.	Part No.	Part Code	Ref. No.	Part No.	Part Code
R809, R810	ERDS2TJ223	001 152 2432 7	R947	ERDS2TJ103	001 152 2347 3	C305, C306	ECFR1E222KAY	001 108 0942 8
R811, R812	ERDS2TJ103	001 152 2347 3	R948	ERDS2TJ471	001 152 2361 5	C307, C308	ECFR1E222KAY	001 108 0942 8
R813, R814	ERDS2TJ104	001 152 2348 2	R949	ERDS2TJ103	001 152 2347 3	C309	ECEA1CU331	001 120 3200 5
R815, R816	ERDS2TJ821	001 152 2454 1	R950, R951	ERDS2TJ102	001 152 2346 4	C310	ECEA1EU221	001 120 2838 7
R817, R818	ERX2ANJ220	001 151 0140 9	R952, R953	ERDS2TJ102	001 152 2346 4	C311, C312	ECKD1H103PF	001 103 1449 7
R819, R820	ERDS2TJ104	001 152 2348 2	R956, R957	ERDS2TJ331	001 152 2356 2	C313, C314	ECFR1E682KAY	
R821, R822	ERDS2TJ821	001 152 2454 1	R962	ERDS2TJ222	001 152 2363 5	C401, C402	ECCD1H820K	001 103 0703 6
R823, R824	ERDS2TJ104	001 152 2348 2	R963	ERDS2TJ103	001 152 2347 3	C403, C404	ECQB1H472JZ	001 106 3380 8
R825, R826	ERDS2TJ821	001 152 2454 1	R964	ERDS2TJ331	001 152 2356 2	C405, C406	ECEA1CKS100	001 120 2600 7
R827, R828	ERDS2TJ103	001 152 2347 3	R965	ERDS2TJ473	001 152 2363 3	C407, C408	ECQM1H473JZ	001 106 0810 9
R829, R830	ERDS2TJ102	001 152 2346 4	R966, R969	ERDS2TJ103	001 152 2347 3	C409, C410	ECQV1H224JZ	001 106 3625 6
R831, R832	ERDS2TJ104	001 152 2348 2	R970	ERDS2TJ102	001 152 2346 4	C411, C412	ECAG25ER68L	001 120 1109 7
R833, R834	ERDS2TJ223	001 152 2432 7	R971	ERDS2TJ473	001 152 2363 3	C413, C414	ECQB1H103JZ	001 106 3225 8
R835, R836	ERDS2TJ881	001 152 2449 8	R974, R975	ERDS2TJ104	001 152 2348 2	C415, C416	ECQB1H472JZ	001 106 3380 8
R837, R838	ERDS2TJ682	001 152 2365 1	R976	ERDS2TJ561	001 152 2364 2	C417, C418	ECEA1CKS100	001 120 2600 7
R839, R840	ERDS2TJ223	001 152 2432 7	R981	ERDS2TJ473	001 152 2363 3	C419, C420	ECQM1H473JZ	001 106 0810 9
R841, R842	ERDS2TJ881	001 152 2449 8				C421, C422	ECQV1H224JZ	001 106 3625 6
R843, R844	ERDS2TJ821	001 152 2454 1				C423, C424	ECAG25ER68L	001 120 1109 7
R845, R846	ERDS2TJ102	001 152 2346 4				C425, C426	ECKD1H152KB	001 103 1467 5
R847, R848	ERDS2TJ102	001 152 2346 4				C427, C428	ECKD1H122KB	001 103 1459 5
R901	ERDS2TJ272	001 152 2354 4				C601	ECKDKC103PF2	001 103 3734 7
R902	ERDS2TJ101	001 152 2421 0				C602	ECEA1EU102	001 120 2705 9
R903	ERDS2TJ223	001 152 2432 7				C603	ECEA1VU222	001 120 3272 9
R904	ERDS2TJ393	001 152 2440 7				C604	ECKD1H103PF	001 103 1449 7
R905	ERDS2TJ472	001 152 2362 4				C605	ECEA1ES332	001 120 3025 2
R906	ERDS2TJ102	001 152 2346 4				C606	ECEA1EU102	001 120 2705 9
R907, R908	ERDS2TJ473	001 152 2363 3				C607, C608	ECEA1AU221	001 120 3131 1
R909	ERDS2TJ272	001 152 2354 4				C609, C610	ECKD1H103PF	001 103 1449 7
R910, R911	ERDS2TJ103	001 152 2347 3				C611	ECKD1H103PF	001 103 1449 7
R912	ERDS2TJ272	001 152 2354 4				C612	ECEA1CKS100	001 120 2600 7
R913	ERDS2TJ332	001 152 2357 1				C613, C614	ECKD1H103PF	001 103 1449 7
R914, R915	ERDS2TJ103	001 152 2347 3				C615	ECEA10V1000	001 120 3028 9
R916	ERDS2TJ332	001 152 2357 1				C616	ECEA0JU222	001 120 3161 5
R917	ERDS2TJ103	001 152 2347 3				C617, C618	ECKD1H103PF	001 103 1449 7
R918, R919	ERDS2TJ563	001 152 2446 1				C620	ECEA1HK010	001 120 0341 5
R920	ERDS2TJ103	001 152 2347 3				C801, C802	ECEA1CN100S	001 120 0233 8
R921, R922	ERDS2TJ473	001 152 2363 3				C803, C804	ECEA1HK010	001 120 0341 5
R923	ERDS2TJ393	001 152 2440 7				C805, C806	ECEA1EK4R7	001 120 0294 5
R926	ERDS2TJ152	001 152 2350 8				C901	ECQB1H822JZ	001 106 3383 5
R928	ERDS2TJ103	001 152 2347 3				C902	ECCD1H470K	001 103 0627 1
R929	ERDS2TJ562	001 152 2445 2				C903	ECEA1HK010	001 120 0341 5
R931	ERDS2TJ103	001 152 2347 3				C904	ECEA1CKS100	001 120 2600 7
R933	ERDS2TJ223	001 152 2432 7				C905	ECKD1H103PF	001 103 1449 7
R934	ERDS2TJ103	001 152 2347 3				C906	ECEA1EK4R7	001 120 0294 5
R935	ERDS2TJ472	001 152 2362 4				C907	ECEA1AU221	001 120 3131 1
R936	ERDS2TJ103	001 152 2347 3				C908, C909	ECCD1H330K	001 103 0567 6
R937	ERDS2TJ223	001 152 2432 7				C910	ECEA1EK3R3	001 120 0292 7
R940	ERDS2TJ562	001 152 2445 2				C912	ECEA1CKS100	001 120 2600 7
R941, R942	ERDS2TJ103	001 152 2347 3				C914	ECKD1H103PF	001 103 1449 7
R943, R944	ERDS2TJ223	001 152 2432 7				C915, C916	ECEA1HK010	001 120 0341 5
R945	ERDS2TJ103	001 152 2347 3				C917	ECKD1H103PF	001 103 1449 7
R946	ERDS2TJ123	001 152 2424 7				C918	ECEA1CK220	001 120 0225 8

#### CAPACITORS

C1, C2	ECKD1H122KB	001 103 1459 5
C3, C4	ECKD1H122KB	001 103 1459 5
C5, C6	ECCC1H221K	001 103 0508 7
C9, C10	ECKD1H561KB	001 103 1576 1
C11, C12	ECEA0JP101	001 120 6035 8
C13, C14	ECQB1H123JZ	001 106 3239 2
C15, C16	ECEA1VPS4R7	
C17, C18	RCBS1H181KBY	
C19, C20	ECEA1HKR47	001 120 0338 0
C21, C22	ECEA1HK010	001 120 0341 5
C23, C24	ECEA1HK010	001 120 0341 5
C25, C26	ECQB1H103JZ	001 106 3225 8
C27, C28	ECQB1H103JZ	001 106 3225 8
C29, C30	RCBS1H181KBY	001 103 5595 2
C31, C32	ECQB1H273JZ	001 106 3393 3
C33, C34	ECEA1HKR47	001 120 0338 0
C35, C36	ECQB1H272JZ	001 106 3456 5
C37, C38	ECQB1H223JZ	
C39, C40	ECQB1H123JZ	001 106 3239 2
C41, C42	ECQB1H333JZ	001 106 4846 1
C43, C44	ECQB1H392JZ	001 106 3406 5
C45, C46	ECKD2H121KB	001 103 1635 7
C47, C48	ECKD2H221KB	001 103 1632 6
C49, C50	ECBT1H561KB5	
C51, C52	ECBT1H561KB5	
C53, C54	ECCC1H221K	001 103 0508 7
C55, C56	ECCC1H221K	001 103 0508 7
C57, C58	ECEA1CPS100	001 120 6036 7
C61, C62	ECEA1CPS100	001 120 6036 7
C63, C64	ECEA1HK010	001 120 0341 5
C68	ECEA1HK2R2B	001 120 0346 0
C73	ECKD1H103PF	001 103 1449 7
C301	ECQP1333JZ	001 106 2674 1
C302	ECQP1183JZ	001 106 1083 2
C303, C304	ECKD1H392KB	001 103 1547 6

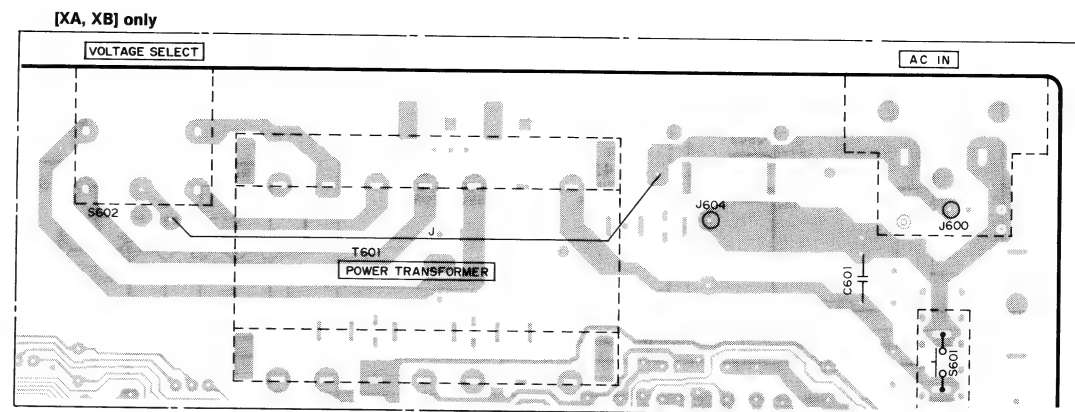
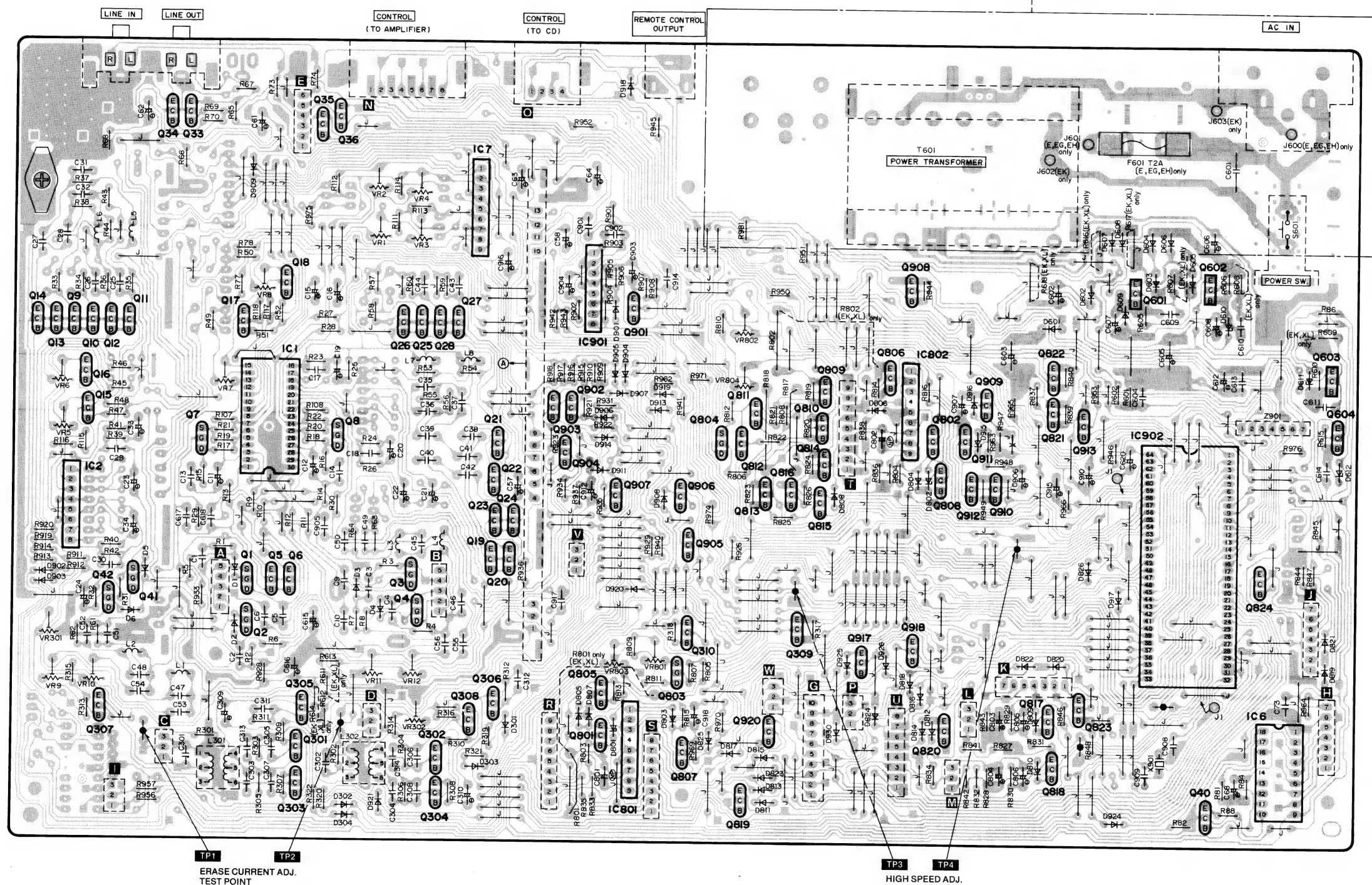
## WIRING CONNECTION DIAGRAM



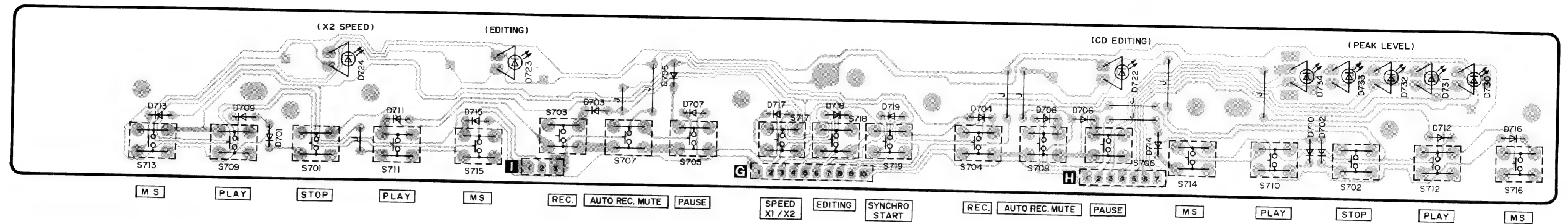


# PRINTED CIRCUIT BOARDS

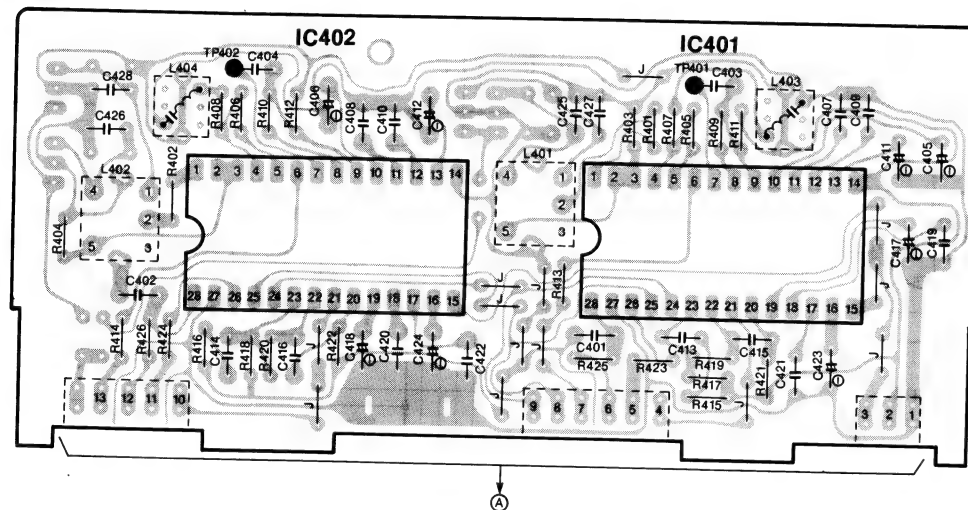
## 1 MAIN P.C.B.



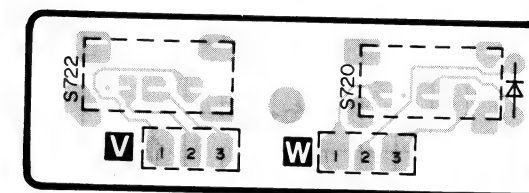
## I OPERATION SW P.C.B.



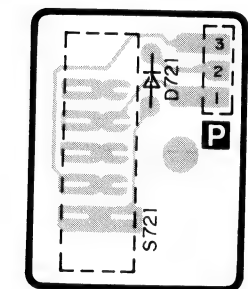
## III DOLBY NR P.C.B.



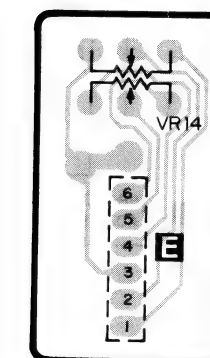
## V NR/MODE SW P.C.B.



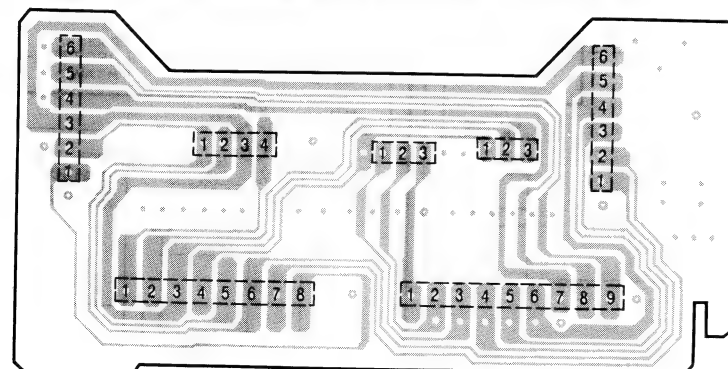
## VI TIMER SW P.C.B.



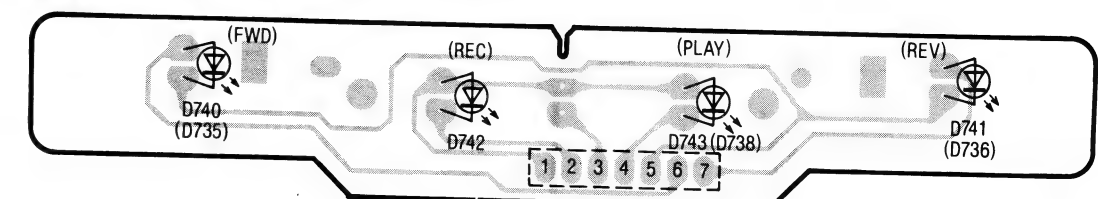
## VII VR P.C.B.



## VIII MECHANISM P.C.B. (DECK A/DECK B)



## IV LED P.C.B. (DECK A/DECK B)



A

B

C

D

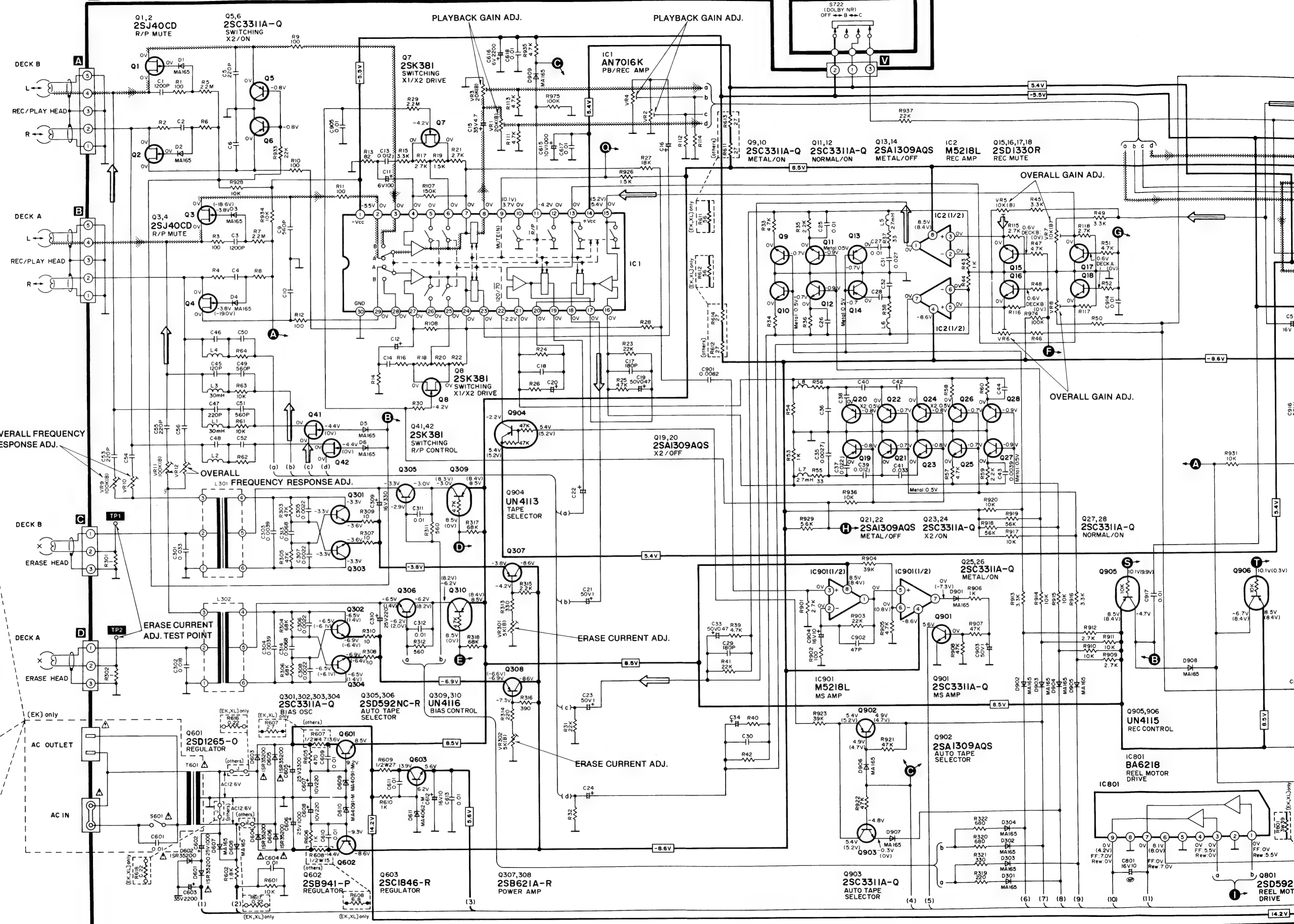
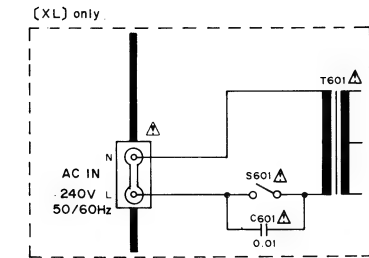
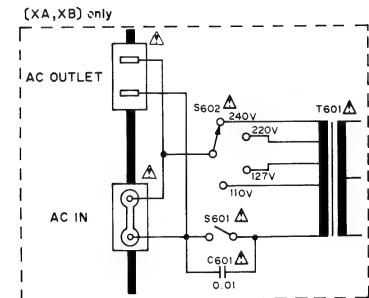
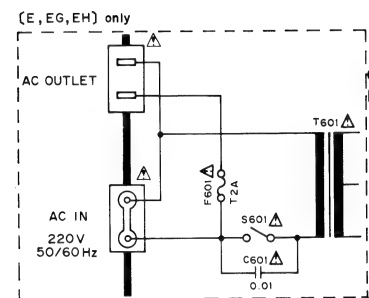
E

F

G

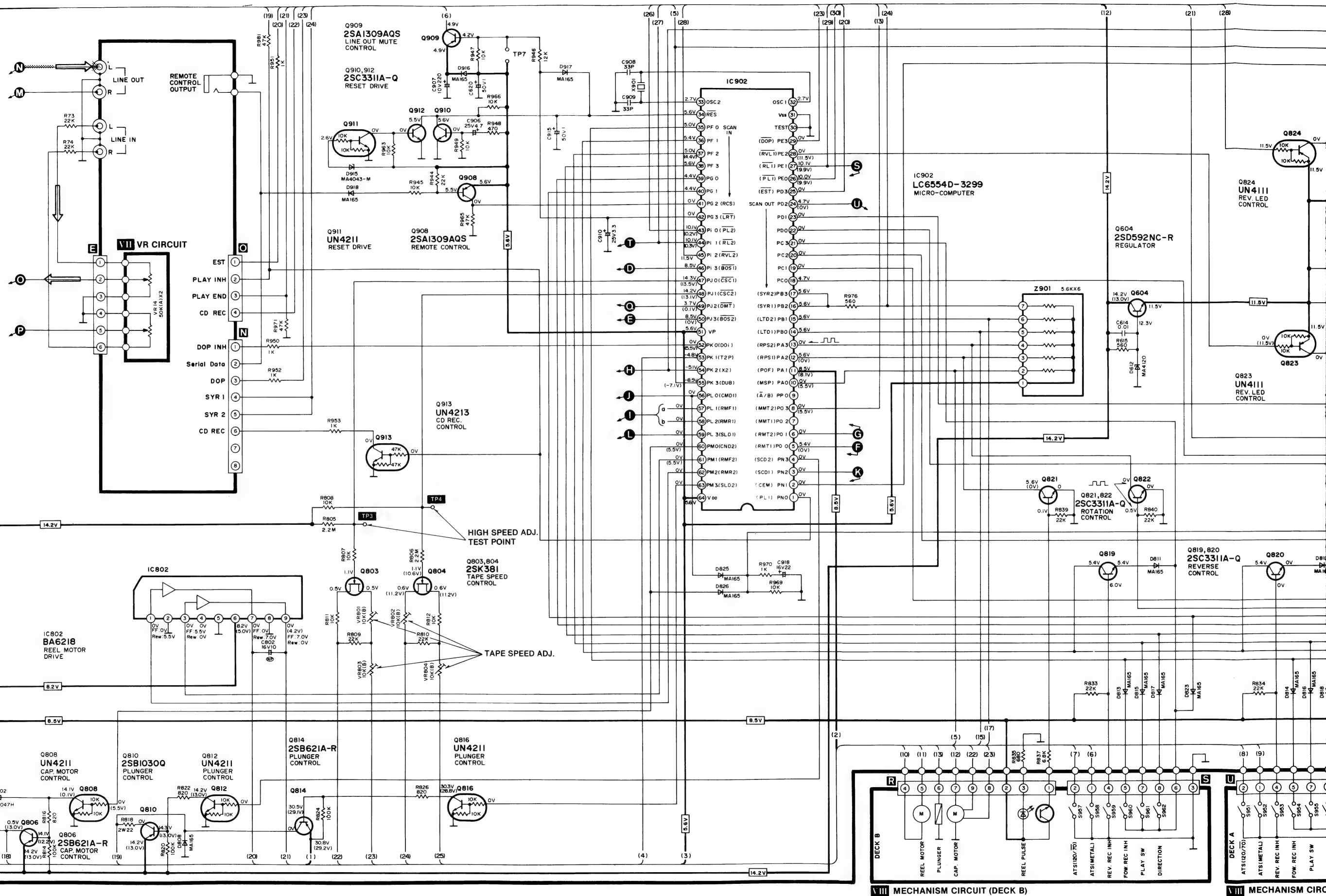
# MAIN CIRCUIT

## NR/MODE SW CIRCUIT









# SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time with the development of new technology.)

## Notes:

- S601 : Power switch in "off" position.
- S602 : Voltage selector in "240V" position ([XA], [XB] area only)
- S701 : DECK [B] Stop switch in "off" position.
- S702 : DECK [A] Stop switch in "off" position.
- S703 : DECK [B] Rec. switch in "off" position.
- S704 : DECK [A] Rec. switch in "off" position.
- S705 : DECK [B] Pause switch in "off" position.
- S706 : DECK [A] Pause switch in "off" position.
- S707 : DECK [B] Auto rec. mute switch in "off" position.
- S708 : DECK [A] Auto rec. mute switch in "off" position.
- S709 : DECK [B] Fow. Play switch in "off" position.
- S710 : DECK [A] Fow. Play switch in "off" position.
- S711 : DECK [B] Rev. Play switch in "off" position.
- S712 : DECK [A] Rev. Play switch in "off" position.
- S713 : DECK [B] FF/Rew switch in "off" position.
- S714 : DECK [A] FF/Rew switch in "off" position.
- S715 : DECK [B] Rew/FF switch in "off" position.
- S716 : DECK [A] Rew/FF switch in "off" position.
- S717 : Editing tape speed selector in "X1" position.
- S718 : Editing switch in "off" position.
- S719 : Synchrostart switch in "off" position.
- S720 : Reverse mode selector in "←" position.
- S721 : Timer stand-by switch in "REC" position.
- S722 : Dolby NR switch in "off" position.
- S951 : DECK [A] ATS (70/120μs) switch in "off" position.
- S952 : DECK [A] ATS (Metal/CrO<sub>2</sub>) switch in "off" position.
- S953 : DECK [A] Rev. Rec. inhibit switch in "off" position.
- S954 : DECK [A] Fow. Rec. inhibit switch in "off" position.
- S955 : DECK [A] Play switch in "off" position.
- S956 : DECK [A] Direction switch in "off" position.
- S957 : DECK [B] ATS (70/120μs) switch in "off" position.
- S958 : DECK [B] ATS (Metal/CrO<sub>2</sub>) switch in "off" position.
- S959 : DECK [B] Rev. Rec. inhibit switch in "off" position.
- S960 : DECK [B] Fow. Rec. inhibit switch in "off" position.
- S961 : DECK [B] Play switch in "off" position.
- S962 : DECK [B] Direction switch in "off" position.

• Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.

1K=1,000 (Ω), 1M=1,000k (Ω)

• Capacity are in micro-farads (μF) unless specified otherwise.

• All voltage values shown in circuitry are under no signal condition and playback mode with volume control at minimum position otherwise specified.

## Important safety notice

Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

( ) ..... Voltage values at record mode.

X2 ..... Voltage values at Editing speed X2 mode.

Me ..... Voltage values at Metal tape mode.

B ..... Voltage values at Dolby B NR mode.

C ..... Voltage values at Dolby C NR mode.

Edit ..... Voltage values at Editing mode.

DECK B ..... Voltage values at DECK B Playback.

For measurement us EVM.

• (—) indicates B (bias).

• (→) indicates the flow of the playback signal.

• (→) indicates the flow of the record signal.

## \* Caution !

IC and LSI are sensitive to static electricity.

Secondary trouble can be prevented by taking care during repair.

\* Cover the parts boxes made of plastics with aluminum foil.

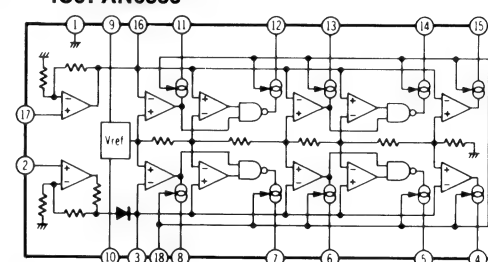
\* Ground the soldering iron.

\* Put a conductive mat on the work table.

\* Do not touch the legs of IC or LSI with the fingers directly.

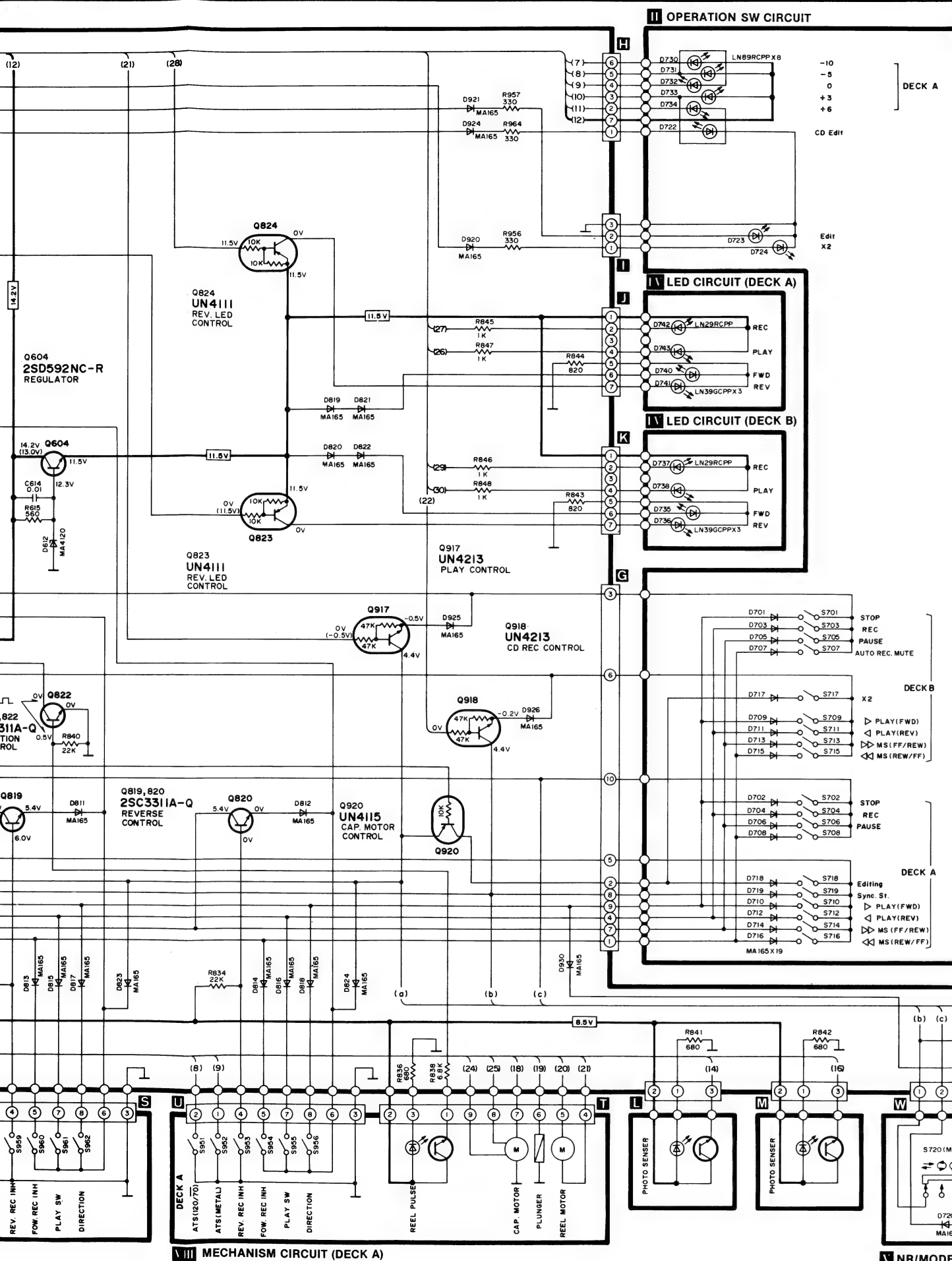
## EQUIVALENT CIRCUIT

IC6: AN6888



## SPECIFICATIONS \* Input level control ...MAX

Playback S/N ratio * Test tape...QZZCFM	Greater than 45dB
Overall distortion * Test tape ...QZZCRA for Normal ...QZZCRX for CrO <sub>2</sub> ...QZZCRZ for Metal	Normal..... Less than 3.5% CrO <sub>2</sub> , Metal..... Less than 4%
Overall S/N ratio * Test tape...QZZCRA	Greater than 43dB (without NAB filter)



REPLACEMENT PARTS LIST

Notes: \* Important safety notice:  
Components identified by Δ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

Ref. No.	Part No.	Part Code	Description
INTEGRATED CIRCUITS			
IC1	AN7016K	001 061 4629 4	I.C. PB/REC AMP.
IC2	MS218L	001 060 3798 7	I.C., OPERATION AMP.
IC6	AN6888	001 060 7693 9	I.C. METER DRIVE
IC7	MN6534	001 061 0884 7	I.C. SWITCH
IC401, IC402	TEA0665	001 060 7933 2	I.C. DOLBY NR
IC801, IC802	BA6218	001 061 1421 0	I.C., MOTOR DRIVE
IC901	MS218L	001 060 3798 7	I.C., OPERATION AMP.
IC902	LC6554D-3299	001 061 4771 9	I.C. MICRO COMPUTER
TRANSISTORS			
Q1, Q2	2SJ40CD	001 030 2807 5	TRANSISTOR
Q3, Q4	2SJ40CD	001 030 2807 5	TRANSISTOR
Q5, Q6	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q7, Q8	2SK381	001 030 4439 1	TRANSISTOR
Q9, Q10	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q11, Q12	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q13, Q14	2SA1309AQS	001 030 4846 0	TRANSISTOR
Q15, Q16	2SD1330R	001 030 2521 6	TRANSISTOR
Q17, Q18	2SD1330R	001 030 2521 6	TRANSISTOR
Q19, Q20	2SA1309AQS	001 030 4846 0	TRANSISTOR
Q21, Q22	2SA1309AQS	001 030 4846 0	TRANSISTOR
Q23, Q24	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q25, Q26	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q27, Q28	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q33, Q34	2SD1330R	001 030 2521 6	TRANSISTOR
Q35, Q36	2SA1253-S	001 030 4843 3	TRANSISTOR
Q40	2SA1309AQS	001 030 4846 0	TRANSISTOR
Q41, Q42	2SK381	001 030 4439 1	TRANSISTOR
Q301, Q302	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q303, Q304	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q305, Q306	2SD592NC-R	001 030 1759 0	TRANSISTOR
Q307, Q308	2SB621A-R	001 030 0668 6	TRANSISTOR
Q309, Q310	UN4116	001 030 4834 4	TRANSISTOR
Q601	2SD1265-0	001 030 2652 6	TRANSISTOR
Q602	2SB941-P	001 030 2696 4	TRANSISTOR
Q603	2SC1846-R	001 030 1134 7	TRANSISTOR
Q604, Q601	2SD592NC-R	001 030 1759 0	TRANSISTOR
Q602	2SD592NC-R	001 030 1759 0	TRANSISTOR
Q803, Q804	2SK381	001 030 4439 1	TRANSISTOR
Q805, Q806	2SB621A-R	001 030 0668 6	TRANSISTOR
Q807, Q808	UN4211	001 030 4033 9	TRANSISTOR
Q809, Q810	2SB1030Q	001 030 4131 8	TRANSISTOR
Q811, Q812	UN4211	001 030 4033 9	TRANSISTOR
Q813, Q814	2SB621A-R	001 030 0668 6	TRANSISTOR
Q815, Q816	UN4211	001 030 4033 9	TRANSISTOR
Q817, Q818	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q819, Q820	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q821, Q822	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q823, Q824	UN4111	001 030 2899 5	TRANSISTOR
Q901	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q902	2SA1309AQS	001 030 4846 0	TRANSISTOR
Q903	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q904	UN4113	001 030 2900 9	TRANSISTOR
Q905, Q906	UN4115	001 030 4833 5	TRANSISTOR
Q907	UN4215	001 030 4836 2	TRANSISTOR
Q908, Q909	2SA1309AQS	001 030 4846 0	TRANSISTOR
Q910	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q911	UN4211	001 030 4033 9	TRANSISTOR
Q912	2SC3311A-Q	001 030 5279 5	TRANSISTOR
Q913, Q917	UN4213	001 030 3020 8	TRANSISTOR
Q918	UN4213	001 030 3020 8	TRANSISTOR
Q920	UN4115	001 030 4833 5	TRANSISTOR
DIODES			
D1, D2	MA165	001 032 0494 0	DIODE
D3, D4	MA165	001 032 0494 0	DIODE
D5, D6	MA165	001 032 0494 0	DIODE
D301, D302	MA165	001 032 0494 0	DIODE
D303, D304	MA165	001 032 0494 0	DIODE
D601, D602 Δ	SVD1SR35200A	001 032 3951 4	RECTIFIER
D603, D604 Δ	SVD1SR35200A	001 032 3951 4	RECTIFIER
D605, D606 Δ	SVD1SR35200A	001 032 3951 4	RECTIFIER
D607, D608	MA165	001 032 0494 0	DIODE
D609, D610	MA4091-M	001 032 7213 5	DIODE
D611	MA4062-M	001 032 7211 7	DIODE

\* Bracketed indications in Ref. No. columns specify the area.  
Parts without these indications can be used for all areas.

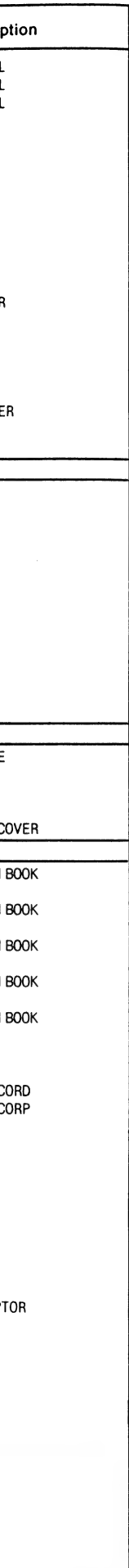
Ref. No.	Part No.	Part Code	Description
D612	MA4120	001 032 7292 0	DIODE
D701, D702	MA165	001 032 0494 0	DIODE
D703, D704	MA165	001 032 0494 0	DIODE
D705, D706	MA165	001 032 0494 0	DIODE
D707, D708	MA165	001 032 0494 0	DIODE
D709, D710	MA165	001 032 0494 0	DIODE
D711, D712	MA165	001 032 0494 0	DIODE
D713, D714	MA165	001 032 0494 0	DIODE
D715, D716	MA165	001 032 0494 0	DIODE
D717, D718	MA165	001 032 0494 0	DIODE
D719, D720	MA165	001 032 0494 0	DIODE
D721	MA165	001 032 0494 0	DIODE
D722, D723	LN89RCPP	001 032 7930 3	LED
D724, D730	LN89RCPP	001 032 7930 3	LED
D731, D732	LN89RCPP	001 032 7930 3	LED
D733, D734	LN89RCPP	001 032 7930 3	LED
D735, D736	LN39GCPP	001 032 5729 0	LED
D737	LN29RCPP	001 032 5758 5	LED
D738, D740	LN39GCPP	001 032 5729 0	LED
D741	LN39GCPP	001 032 5729 0	LED
D742	LN29RCPP	001 032 5758 5	LED
D743	LN39GCPP	001 032 5729 0	LED
D801, D802	MA4047H	001 032 8141 0	DIODE
D803, D804	MA165	001 032 0494 0	DIODE
D805, D806	MA165	001 032 0494 0	DIODE
D807, D808	MA165	001 032 0494 0	DIODE
D809, D810	MA165	001 032 0494 0	DIODE
D811, D812	MA165	001 032 0494 0	DIODE
D813, D814	MA165	001 032 0494 0	DIODE
D815, D816	MA165	001 032 0494 0	DIODE
D817, D818	MA165	001 032 0494 0	DIODE
D819, D820	MA165	001 032 0494 0	DIODE
D821, D822	MA165	001 032 0494 0	DIODE
D823, D824	MA165	001 032 0494 0	DIODE
D825, D826	MA165	001 032 0494 0	DIODE
D901, D902	MA165	001 032 0494 0	DIODE
D903, D904	MA165	001 032 0494 0	DIODE
D905, D906	MA165	001 032 0494 0	DIODE
D907, D908	MA165	001 032 0494 0	DIODE
D909, D911	MA165	001 032 0494 0	DIODE
D913, D914	MA165	001 032 0494 0	DIODE
D915	MA4043M	001 032 5574 1	DIODE
D916, D917	MA165	001 032 0494 0	DIODE
D918, D919	MA165	001 032 0494 0	DIODE
D920, D921	MA165	001 032 0494 0	DIODE
D924, D925	MA165	001 032 0494 0	DIODE
D926, D930	MA165	001 032 0494 0	DIODE
VARIABLE RESISTORS			
VR1, VR2	EVND4AA00B24	001 180 2244 1	20KΩ (B)
VR3, VR4	EVND4AA00B24	001 180 2244 1	20KΩ (B)
VR5, VR6	EVND4AA00B14	001 180 2242 3	10KΩ (B)
VR7, VR8	EVND4AA00B14	001 180 2242 3	10KΩ (B)
VR9, VR10	EVND4AA00B15	001 180 2243 2	100KΩ (B)
VR11, VR12	EVND4AA00B15	001 180 2243 2	100KΩ (B)
VR14	EVJRK025A54	001 174 8992 4	INPUT LEVEL, 500KΩ (A) × 2
VR301, VR302	EVND4AA00B53	001 180 2319 9	5KΩ (B)
VR801, VR802	EVND4AA00B14	001 180 2242 3	10KΩ (B)
VR803, VR804	EVN4LCA00B14	001 180 3116 4	10KΩ (B)
COILS AND TRANSFORMERS			
L1, L2	SLQX303-1K	001 211 1756 6	CHOKO COIL
L3, L4	SLQX303-1K	001 211 1756 6	CHOKO COIL
L5, L6	SLQX272-1YT	001 211 0649 2	CHOCK COIL
L7, L8	SLQX272-1YT	001 211 0649 2	CHOCK COIL
L301, L302	SL09C19-K	001 211 2472 1	OSCILLATOR COIL
L401, L402	QLB40048	001 210 7275 9	COIL
L403, L404	ELM7Q306A	001 210 6560 1	COIL
T601 Δ	SLT5V11-S	001 202 9027 1	POWER TRANSFORMER
E, EG, EH			
T601 Δ	SLT5V12-S	001 202 9028 0	POWER TRANSFORMER
EK, XL			
T601 Δ	SLT5V13-S	001 202 9041 3	POWER TRANSFORMER
XA, XB			
COMPONENT COMBINATIONS			
Z901	EXBF7E562J	001 230 1578 9	COMPONENT COMBINATION 5.6KΩ × 6

Ref. No.	Part No.	Part Code	Description
OSCILLATORS			
X901	SVFCSA300MG	001 241 1296 5	CERAMIC FILTER
FUSES			
F601 Δ	XBAS2A2001	002 380 0410 1	FUSE, 250V, T2A
E, EG, EH			
SWITCHES			
S601 Δ	ESB8249V	003 435 5877 0	POWER SWITCH
S602 Δ	SSR187-1	003 430 2201 5	SW. VOLTAGE SELECT
XA, XB			
S701, S702	EVQQA0C05G	003 439 2072 1	SW
S703, S704	EVQQA0C05G	003 439 2072 1	SW
S705, S706	EVQQA0C05G	003 439 2072 1	SW
S707, S708	EVQQA0C05G	003 439 2072 1	SW
S709, S710	EVQQA0C05G	003 439 2072 1	SW
S711, S712	EVQQA0C05G	003 439 2072 1	SW
S713, S714	EVQQA0C05G	003 439 2072 1	SW
S715, S716	EVQQA0C05G	003 439 2072 1	SW
S717, S718	EVQQA0C05G	003 439 2072 1	SW
S719	EVQQA0C05G	003 439 2072 1	SW
S720	SSS157	003 431 3020 9	SWITCH SLIDE
S721	SSS147	003 431 3301 3	SWITCH SLIDE
S722	SSS157	003 431 3020 9	SWITCH SLIDE
CABINET AND CHASSIS			
1	SBC666-1	016 702 6076 0	BUTTON
2	SBC934	016 702 6947 8	BUTTON
3	SBC935	016 702 6946 9	BUTTON
4	SBD143	016 700 1971 8	KNOB
5	SBN1222	016 700 1970 9	KNOB
6	SGXSX866-KE		ORNAMENT
6-1	QBP2006A	015 727 0706 8	SPRING
7	SGP7060-11A	016 840 7780 8	REAR PANEL
XB			
7	SGP7060-3A	016 840 7770 0	REAR PANEL
E, EG, EH			
7	SGP7060-3B	016 840 7779 1	REAR PANEL
E			
7	SGP7060-5A	016 840 7771 9	REAR PANEL
EK			
7	SGP7060-7A	016 840 7778 2	REAR PANEL
XA			
7	SGP7060-9A	016 840 7777 3	REAR PANEL
XL			
8	SGX9030	016 846 3729 7	SPACER
9	SGYSX888-KE	016 840 7782 6	FRONT PANEL
10	SGYSX888-KE1	016 840 7783 5	SUB PANEL
11	SHE187-1	016 918 0584 9	SPACER
12	SMQXS840-KN	016 745 0225 0	GEAR
13	SHR5312	016 652 0550 6	SPACER
14	SJN25	016 892 0127 9	TAPE COUNTER
15	SKL307	016 828 0325 7	FOOT
16	SKU11651-1	016 802 2194 4	BOTTOM BOARD
17	SMQ20020	016 754 0062 0	ANGULAR BELT
18	SMQ30042	016 650 5347 7	ANGLE
19	SMQ30043	016 718 3375 8	ANGLE
20	SMQ30044	016 718 3374 9	ANGLE
21	SUB264	016 712 0354 5	ROD
22	SUS851	016 726 0931 8	SPRING
23	SUS852	016 726 0930 9	COIL SPRING
24	SUM3060	016 650 5346 8	ANGLE
25	SUM3061	016 650 5345 9	ANGLE
26	SJS703	003 403 7104 8	CONNECTOR
27	SUX58	016 634 0144 8	BRACING STRUT
28	SJS309	003 403 7102 0	CONNECTOR
29	LN041368P	001 033 0249 6	DIODE, GAASP
30	SGXSX888-KE	016 846 3836 5	CASSETTE LID (DECK B)
31	SGXSX888-KE1	016 846 3836 6	CASSETTE LID (DECK A)
32	SKC2070K96	016 800 3038 1	CABINET
33	SJF3057N	003 410 3829 3	TERMINAL BOARD
34	SJJ130-2	003 400 7317 2	JACK
35	SME103-4	016 601 0460 2	SHIELD PARTS
36 Δ	SJSD16	003 400 7436 6	AC SOCKET
XL			
36 Δ	SJS9236	003 403 4660 7	AC SOCKET
EK, E, EG, EH, XA, XB			
37	LN018365P	001 032 9923 4	DIODE, GAASP
38	LN058367P	001 032 9434 6	DIODE, GAASP
39	SJT3319	003 403 3892 7	CONNECTOR
39	SJT3511	003 403 3893 6	CONNECTOR
39	SJT3611	003 410 6000 8	CONNECTOR
39	SJT3709	003 403 4232 3	CONNECTOR

Ref. No.	Part No.	Part Code	Description
40	SJT30340LX-V	003 410 6075 9	LUG TERMINAL
40	SJT30740LX-V	003 410 5990 7	LUG TERMINAL
40	SJT31040LX-V	003 410 6112 1	LUG TERMINAL
41	SJS804	003 403 4910 8	CONNECTOR
42	SJS5633	003 400 5929 8	CONNECTOR
43	SJT785	003 410 6015 1	CONTACT
44	SJT783	003 410 6001 7	CONTACT
45	SJS5331	003 400 5924 3	CONNECTOR
45	SJS5629	003 400 5917 2	CONNECTOR
45	SJS5707	003 400 1663 1	CONNECTOR
46	SJS402	003 403 7103 9	CONNECTOR
47	SJS9332A	003 403 7376 6	CONNECTOR
EK			
48	SUW3075		SHIELD COVER
49	△ SJS9225	003 400 3946 5	AC OUTLET
E, EG, EH, XA,			
49	△ SJS9332B	003 403 7377 5	CONNECTOR
EK			
50	SHR301	016 645 0044 0	CLAMPER
51	SMX897	016 600 0483 0	SHIELD SPACER
52	SJT390	003 410 7360 5	FUSE HOLDER
E, EG, EH			
SCREWS, WASHERS & NUTS			
N1	XNS7	005 507 0569 4	NUT
N2	XUC2FT	005 512 0126 6	E-RING
N3	XTB3*8J	005 501 1536 0	SCREW
N4	XTB3*8G	005 501 2607 7	SCREW
N5	XTB3*8FFR	005 501 3569 2	SCREW
N6	XTB3*8JFZ	005 501 0138 3	SCREW
N7	XTB3*12J	005 501 1534 1	SCREW
N8	XTB3*12JFR	005 501 2752 9	SCREW
N9	XTB3*20J	005 501 3410 4	SCREW
N11	XTS3*8J	005 501 0712 5	SCREW
N12	XWA3BFZ	005 513 1250 4	WASHER
N13	SNE2129-1	005 500 7938 6	SCREW
N14	XTBS3*6JFZ1	005 501 2523 0	SCREW
PACKINGS			
P1	SPG5932	016 971 5056 6	PACKING CASE
P2	SPS4919-1	016 977 3273 8	PAD
P3	SPS4920	016 977 3266 7	PAD
P4	SPS4983	016 977 3319 1	PAD
P5	SPP753	016 978 0504 9	PROTECTION COVER
ACCESSORIES			
A1	SQF12914	016 983 5169 3	INSTRUCTION BOOK
E, EH			
A1	SQF12915	016 983 5168 4	INSTRUCTION BOOK
EK			
A1	SQF12916	016 983 5183 5	INSTRUCTION BOOK
EG			
A1	SQF12933	016 983 5182 6	INSTRUCTION BOOK
XA, XB			
A1	SQF12934	016 983 5184 4	INSTRUCTION BOOK
XL			
A2	SJP2264	003 492 5035 3	CORD
A3	SJPK2202	003 492 6415 1	CORD
A4	SWKSX888-KE		CONNECTION CORD
A5	SWKSX889-KE1	016 934 0175 0	CONNECTION CORP
A6	SFDAC05E03	003 490 4809 5	POWER CORD
△			
E, EG, EH			
A6	△ SJA169-1	003 490 4122 9	POWER CORD
XA			
A6	△ SJA173	003 490 4161 2	POWER CORD
XL			
A6	△ SJA183	003 490 4873 7	POWER CORD
XB			
A6	△ SJA188	003 490 5443 1	POWER CORD
EK			
A7	△ SJP9215	003 402 1437 9	AC PLUG ADAPTOR
XA, XB			



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# Service Manual

Cassette Deck

RS-X888

**Supplement**

Dolby B • C NR-Equipped  
Stereo Double Cassette Deck

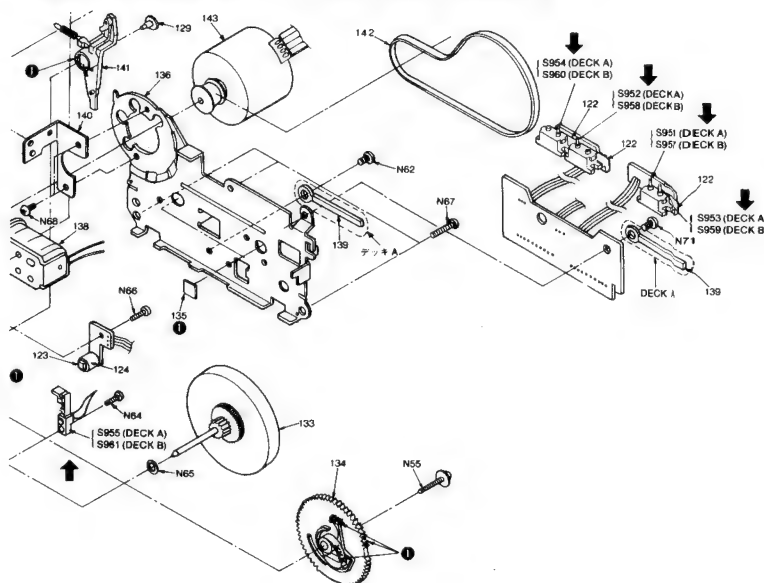
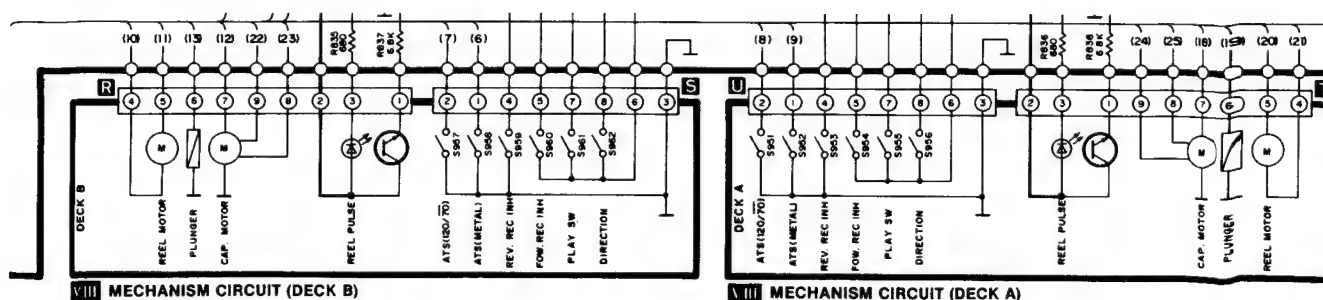
Please file and use this supplement manual together with the service manual for Model No. RS-X844, Order No. HAD8704078C8.

**Note:**

- Addition parts in the replacement parts list are shown by arrow (➡).

**ADDITION**
**REPLACEMENT PARTS LIST**

Ref No.	Part No.	Description
<b>SWITCHES</b>		
S951, 957	SMQA1058	ATS (70/120 $\mu$ s)
S952, 958	SMQA1059	ATS (METAL)
S953, 959	SMQA1058	REV REC
S954, 960	SMQA1040	FOW REC
S955, 961	SMQA1023	PLAY
S956, 962	SMQA1023	DIRECTION

**MECHANICAL PARTS LOCATION (PAGE 16)**

**SCHEMATIC DIAGRAM (PAGE 30)**

**Technics**

Matsushita Electric Trading Co., Ltd.  
P.O. Box 288, Central Osaka Japan

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# Service Manual

Cassette Deck

RS-X866

Dolby B • C NR-Equipped  
Stereo Double Cassette Deck

Supplement

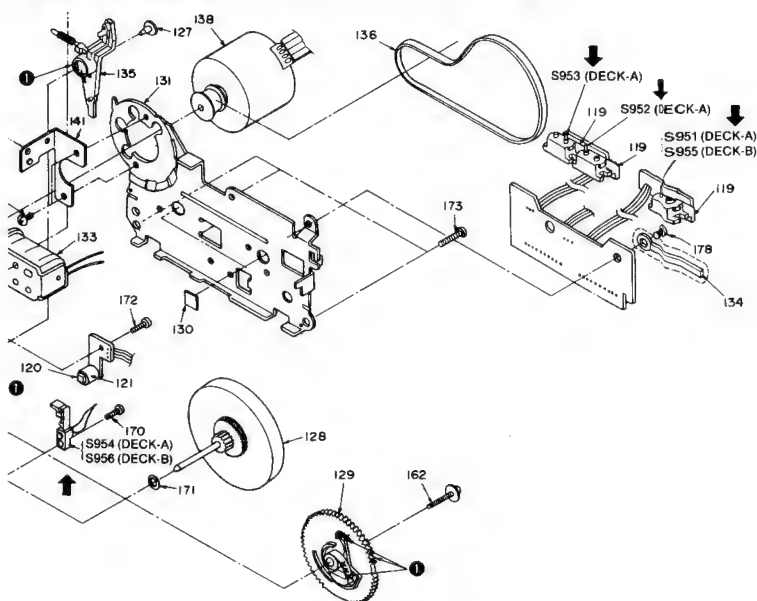
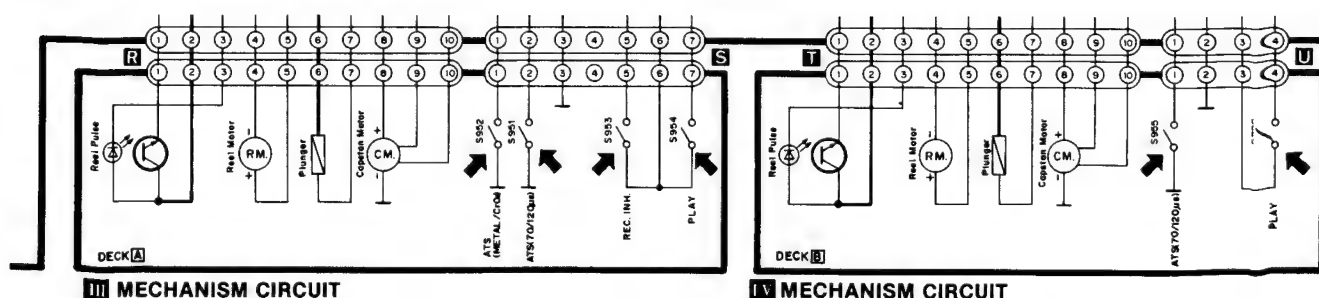
Please file and use this supplement manual together with the service manual for Model No. RS-X866, Order No. HAD8705103C8.

**Note:**

- Addition parts in the replacement parts list are shown by arrow (⇒).

**ADDITION****REPLACEMENT PARTS LIST**

Ref No.	Part No.	Description
<b>SWITCHES</b>		
S951	SMQA1059	ATS (70/120μs)
S952	SMQA1059	ATS (M/cro <sub>2</sub> )
S953	SMQA1040	REC
S954	SMQA1023	PLAY
S955	SMQA1059	ATS (70/120μs)
S956	SMQA1023	PLAY

**MECHANICAL PARTS LOCATION (PAGE 16)****SCHEMATIC DIAGRAM (PAGE 29)****I MECHANISM CIRCUIT****II MECHANISM CIRCUIT**

Technics

Matsushita Electric Trading Co., Ltd.  
P.O. Box 288, Central Osaka Japan

Printed in Japan  
H871 106980 IM

# DEUTSCH

Verwenden Sie bitte diese Broschüre Zusammen mit der Service-Anleitung für das Modell Nr. RS-X888.

## ■ MESSUNGEN UND EINSTELL METHODEN

### Meßinstrumente

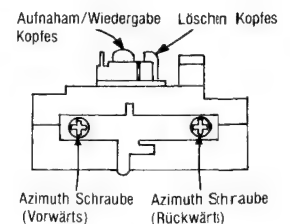
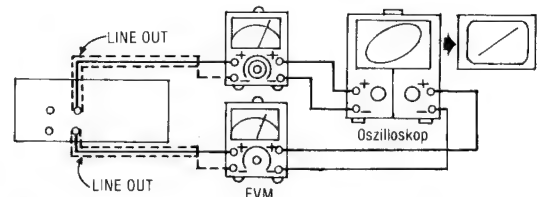
- Elektronisches Voltmeter (EVM)
- Oszilloskop
- Digitaler Frequenzmesser
- Audiofrequenz-Oszillator
- Dämpfungswiderstand
- Gleichstrom-Voltmeter
- Widerstand (600Ω)

### Kopfazimut-Justierung

1. Den Azimut-Justierungsteil (8kHz, -20dB) des Testbandes (QZZCFM) wiedergeben und die Winkel-justierungseinstellschraube so verstellen, daß der Ausgang vom linken und rechten Kanal maximal wird. (Wenn die Justierpositionen für den linken und rechten Kanal verschieden sind, ist eine Position zu finden, wo der Ausgang des linken und rechten Kanals ausgeglichen ist, und dann ist die Justierung durchzuführen.)
2. Gleichzeitig eine Lissajous-Wellenform ziehen und Phasenablenkung eliminieren.
3. Dieselbe Justierung ist auch für die Rückwärts-Wiedergabe-Betriebsart durchzuführen.

### Prüfung des Vorwärts-und Rückwärts-Rotationspegel-Unterschieds.

4. Den für Wiedergabe-Verstärkungsgrad justierten Teil (315Hz, 0dB) des Testbandes (QZZCFM) wiedergeben und dann prüfen, ob der Vorwärts-und Rückwärts-Rotationspegel-Unterschied innerhalb 1dB liegt.
5. Nach der Justierung ist die Winkel-Justierschraube mit Lack zu sichern.



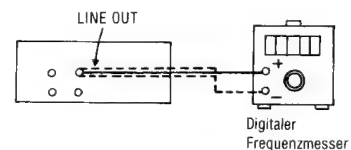
### Bandgeschwindigkeits-Justierung (DECK A, B)

#### — Schneller bandlauf —

1. Stellen Sie den Bandgeschwindigkeitswählschalter auf "X2" und erden Sie Deck B an TP3 und Deck A an TP4.
2. Spielen Sie den Mittelteil des Testbandes (QZZCWAT) ab.
3. Justieren Sie VR803 von Deck B und VR804 von Deck A so, daß die Abgabewerte innerhalb der Standardwerte liegen.

#### — Normaler Bandlauf —

4. Stellen Sie den Bandgeschwindigkeitswählschalter auf "X1" und unterbrechen Sie Deck B in TP3 und Deck A in TP4.
5. Spielen Sie den Mittelteil des Testbandes (QZZCWAT) ab.
6. Justieren Sie VR801 von Deck B und VR802 von Deck A so, daß die Abgabewerte innerhalb der Standardwerte liegen.



**Standardwert: 3000 ± 15 Hz (Normal), 6000 ± 30 Hz (Schnell)**

## Wiedergabe-Frequenzgang

1. Den Wiedergabe-Frequenzgangteil (315 Hz, 12,5 kHz~63 Hz, -20 dB) des Testbandes (QZZCFM) wiedergeben.
2. Überprüfen, ob der Frequenzgang innerhalb des in Abb. 2 für den linken und rechten Kanal gezeigten Bereichs liegt.

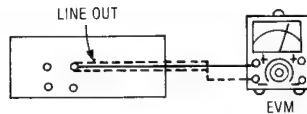


Abb. 1

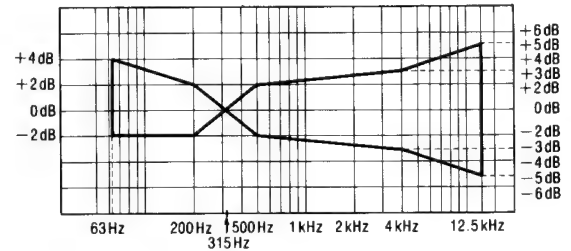


Abb. 2

## Justierung des Wiedergabe-Verstärkungsgrades (DECK A, B)

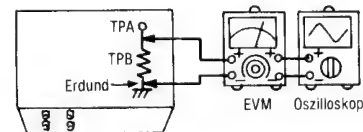
1. Der Testaufbau ist in Abb. 1 gezeigt.
2. Den für den Wiedergabe-Verstärkungsgrad justierten Teil (315 Hz, 0 dB) des Testbandes (QZZCFM) wiedergeben.
3. Den VR1, (linker Kanal) [[VR2 (rechter Kanal)]] für Deck B und den VR3 (linker Kanal) [[VR4 (rechter Kanal)]] für Deck A so justieren, daß die Ausgangsleistung dem Standard-Wert entspricht.

**Standard-Wert:  $0,4 V \pm 0,5 dB$**

## Löschstrom-Justierung (DECK A, B)

1. Eine Reineisenband-Cassette einsetzen.
2. Die Aufnahmetaste und die Pausentaste drücken.
3. Den VR301 (DECK B) [[VR302 (DECK A)]] so justieren, daß die Ausgangsleistung zwischen TP1 (DECK B) [[TP2 (DECK A)]] und Masse dem Standard-Wert entspricht.

**Standard-Wert:  $170 \pm 5 mA$  (Metal), ( $170 \pm 5 mV$ )**



**TPA: TP1 (Deck B), TP2 (Deck A)**  
**TPB: VR301 (Deck B), VR302 (Deck A)**

## Gesamtfrequenzgang (DECK A, B)

1. Legen Sie eine normale Leerkassette (QZZCRA) ein und nehmen ein Signal (50 Hz~12,5 kHz) von 20 dB auf, das durch das Referenzeingabepegelsignal (1 kHz, -24 dB) gedämpft wird.
2. Das in Schritt 1 aufgezeichnete Signal wiedergeben und prüfen, ob der Pegel jeder Ausgangsfrequenz im Bereich liegt, der in Abb. 4 im Vergleich zur Referenzfrequenz (1 kHz) gezeigt wird.
3. Falls er nicht im Standard-Bereich liegt, ist der Vormagnetisierungsstrom mit VR9 (linker Kanal) [[VR10 (rechter Kanal)]] für Deck B und den VR11 (linker Kanal) [[VR12 (rechter Kanal)]] für Deck A so zu justieren, daß der Frequenzpegel innerhalb des Standards zu liegen kommt.
  - Erhöhter Pegel im Frequenzbereich.....Den Vormagnetisierungsstrom erhöhen.
  - Reduzierter Pegel im Frequenzbereich.....Den Vormagnetisierungsstrom senken.
4. Anschließend das auf der CrO2-Leerband-Cassette (QZZCRX) und der Reineisenband-Leercassette (QZZCRZ) aufgezeichnete Signal auf 14 kHz erhöhen und auf gleiche Weise justieren, wie vorgehend beschrieben. Dann überprüfen, ob der Frequenzpegel innerhalb des in Abb. 5 gezeigten Bereichs liegt.

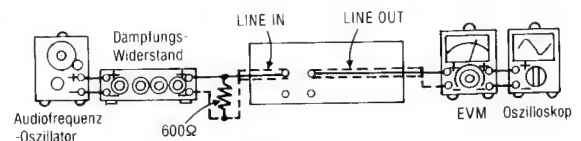


Abb. 3

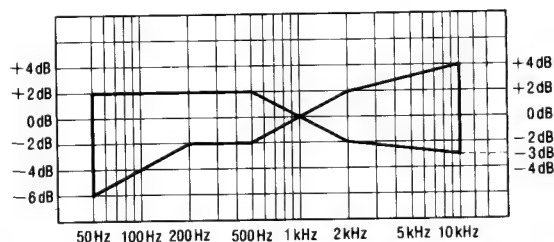


Abb. 4

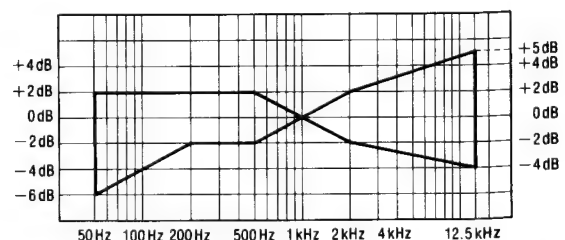


Abb. 5

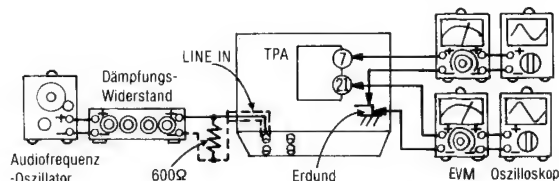
## Justierung des Gesamtverstärkungsgrades (DECK A, B)

1. Der Testaufbau ist in Abb. 3 gezeigt.
2. Eine Normalband-Leercassette (QZZCRA) einsetzen und im Aufnahmepause-Zustand des Gerätes das Referenzsignal (1 kHz, -24 dB) eingeben.
3. Die Ausgangsleistung mit dem Dämpfungswiderstand auf 0.4 V justieren und dann aufnehmen.
4. Das in Schritt 3 aufgezeichnete Signal wiedergeben und überprüfen, ob die Ausgangsleistung dem Standard-Wert entspricht.
5. Falls sie nicht dem Standard-Wert entspricht, ist der VR5 (linker Kanal) [[VR6 (rechter Kanal)]] für Deck B und den VR7 (linker Kanal) [[VR8 (rechter Kanal)]] für Deck A zu justieren, und dann sind die Schritte (2), (3) und (4) zu Wiederholen, bis die Ausgangsleistung dem Standard-Wert entspricht.

**Standard-Wert:  $0\text{ V} \pm 0,5\text{ dB}$**

## Dolby-Rauschunterdrückungs-Schaltkreis

1. Eine Normalband-Cassette einsetzen und im Aufnahmepause-Zustand des Gerätes ein 1 kHz-Signal eingeben.
2. Mit dem Dämpfungswiderstand so justieren, daß die Ausgangsleistung zwischen Anschluß ⑦ des IC401 (linker Kanal) [[IC402 (rechter Kanal)]] und Masse 12.3 mV beträgt.



TPA { IC401 (Linker Kanal)  
IC402 (Rechter Kanal)

### —Dolby B (Dolby-C) (Kodierungseigenschaft)—

3. Den Rauschunterdrückungs-Schaltkreis (NR) auf "Dolby B (Dolby C)" einstellen und das Eingangssignal auf 1 kHz, 5 kHz verändern.
4. Überprüfen, ob die Ausgangsleistung zwischen Anschluß ② des IC401 (linker Kanal) [[IC402 (rechter Kanal)]] und Masse wie vorgeschrieben gegenüber dem Pegel im rauschunterdrückungsfreiem Zustand verändert wird.

#### Dolby-B:

**Standard-Wert:  $6 \pm 2,5\text{ dB}$  (1 kHz),  $8 \pm 2,5\text{ dB}$  (5 kHz)**

#### Dolby-C:

**Standard-Wert:  $11,5 \pm 2,5\text{ dB}$  (1 kHz),  $8,5 \pm 2,5\text{ dB}$  (5 kHz)**

# FRANÇAIS

Ceci est à utiliser conjointement avec le manuel d'entretien du modèle No. RS-X888.

## METHODES DES MEASURES ET REGLAGES

### Appareils de mesure

- Voltmètre électronique
- Oscilloscope
- Compteur de fréquence numérique
- Oscillateur de fréquence audio

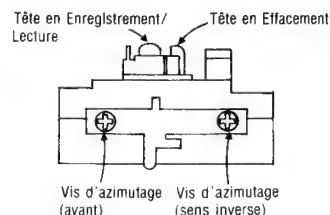
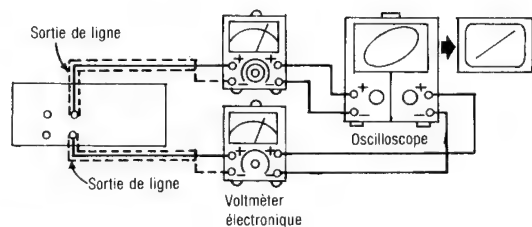
- A.T.T. (Atténuateur)
- Voltmètre à C.C.
- Résistance (600Ω)

### Réglage de l'angle des têtes de lecture

1. Faire jouer partie réglée azimutale (8kHz, -20dB) de la bande d'essai (QZZCFM) et régler la vis de mise au point azimutale de telle sorte que les puissances de sortie du canal de gauche et du canal de droite soient au maximum. (Si les positions de réglage du canal de gauche et du canal de droite sont différentes, trouver une position où les puissances de sortie des canaux de gauche et de droite soient équilibrées, puis effectuer la mise au point.)
2. En même temps, établir une forme d'onde de Lissajous et éliminer la déviation de phase.
3. Effectuer le même réglage sur le mode d'audition en sens inverse.

### Vérifier la différence de niveau de rotation en marche avant et en marche arrière.

4. Faire jouer la partie réglée de l'amplification de la lecture (315Hz, 0dB) de la bande d'essai (QZZCFM), puis vérifier que la différence de niveau de rotation de la marche avant et de la marche arrière soit en deçà de 1dB.
5. Après le réglage, appliquer un blocage de vis à la vis de réglage azimutale.



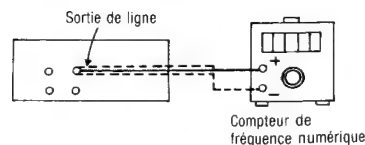
### Réglage de la vitesse de défilement de la bande (PLATINE A, B)

#### — A grande vitesse —

1. Régler le commutateur de vitesse de défilement de la bande de montage sur "X2" et relier à la terre la platine B sur TP3 et la platine A sur TP4.
2. Faire jouer la partie centrale de la bande d'essai (QZZCWAT).
3. Ajuster la platine B sur VR803 et la platine A sur VR804 de telle sorte qu la puissance de sortie soit en deçà de la normale.

#### — Vitesse normale —

4. Régler le commutateur de vitesse de défilement de la bande de montage sur "X1" et mettre hors circuit la platine B sur TP3 et la platine A sur TP4.
5. Faire jouer la partie centrale de la bande d'essai (QZZCWAT).
6. Ajuster la platine B sur VR801 et la platine A sur VR802 de telle sorte que la puissance de sortie soit en deçà de la normale.



Valeur standard: 3000 ± 15 Hz (normale); 6000 ± 30 Hz (élevée)

## Réponse en fréquence de la lecture

1. Faire jouer la partie de la réponse en fréquence de la lecture (315 Hz, 12,5 kHz ~ 63 Hz, -20 dB) de la bande d'essai (QZZCFM).
2. Vérifier que la fréquence soit en deçà de la plage montrée à la Fig. 2, à la fois pour le canal de gauche et le canal de droite.

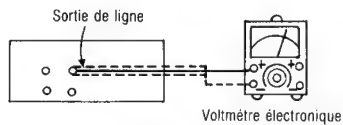


Fig. 1

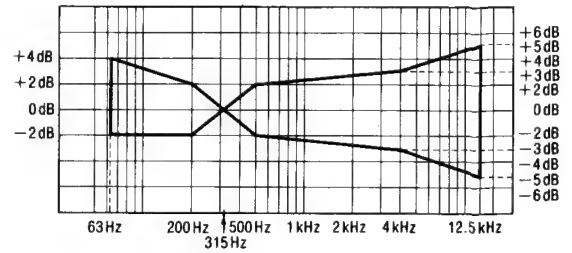


Fig. 2

## Réglage d'amplification de la lecture (PLATINE A, B)

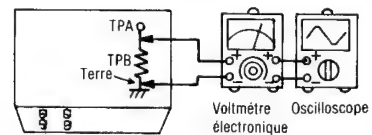
1. Le raccordement de l'équipement d'essai est montré à la Fig. 1.
2. Faire jouer la partie réglée d'amplification de la lecture (315 Hz, 0 dB) de la bande d'essai (QZZCFM).
3. Régler la platine B: VR1 (canal de gauche) [[VR2 (canal de droite)]] et la platine A: VR3, (canal de gauche) [[VR4 (canal de droite)]] de telle sorte que la puissance de sortie soit en deçà de la normale.

Valeur normalisée:  $0,4 V \pm 0,5 dB$

## Réglage de la tention d'effacement (PLATINE A, B)

1. Introduire la bande métallisée.
2. Appuyer sur les touches d'enregistrement et d'intermission.
3. Régler VR301 (platine B) [[VR302 (platine A)]] de telle sorte que la puissance de sortie entre TP1 (platine B) [[TP2 (platine A)]] et la masse soit en deçà de la normale.

Valeur normalisée:  
 $170 \pm 5 mA$  (Métallisée) ( $170 \pm 5 mV$ )



TPA: TP1 (platine B), TP2 (platine A)  
TPB: VR301 (platine B), VR302 (platine A)

## Réponse en fréquence globale (PLATINE A, B)

1. Installer une bande vierge normale (QZZCRA) et enregistrer en appliquant un signal (50 Hz ~ 12,5 kHz), 20 dB atténués à partir du signal du niveau d'entrée de référence (1 kHz, -24 dB).

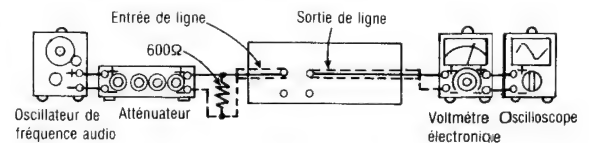


Fig. 3

2. Faire jouer le signal enregistré à l'étape 1 et vérifier que le niveau de chaque fréquence de sortie soit en deçà de la plage montrée à la Fig. 4 en comparaison avec la fréquence de référence (1 kHz).
3. S'il n'est pas en deçà de la plage standard, régler le courant de polarisation avec platine B: VR9 (canal de gauche) [[VR10 (canal de droite)]] et platine A: VR11 (canal de gauche) [[VR12 (canal de droite)]] de telle sorte que le niveau de fréquence soit en deçà de la normale.
  - Niveau vers le haut dans la plage de fréquence élevée .....Augmenter le courant de polarisation.
  - Niveau vers le bas dans la plage de fréquence élevée .....Diminuer le courant de polarisation.
4. Après cela, amplifier le signal enregistré sur la bande vierge CrO2 (QZZCRX) et la bande vierge métallisée (QZZCRZ) jusqu'à 14 kHz et régler de la même manière que celle mentionné ci-dessus. Puis, vérifier que le niveau de fréquence soit en deçà de la plage montrée à la Fig. 5.

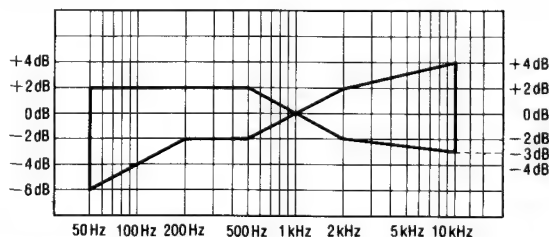


Fig. 4

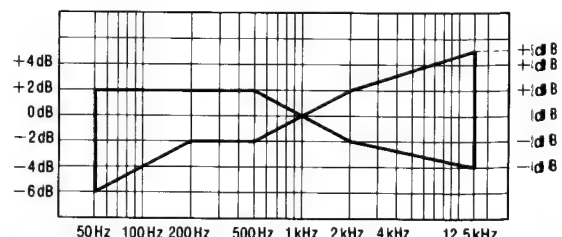


Fig. 5

## Réglage d'amplification globale (PLATINE A, B)

1. Le raccordement de l'équipement d'essai est montré à la Fig. 3.
2. Installer une bande vierge normale (QZZCRA) et appliquer le signal de niveau d'entrée de référence (1 kHz, -24 dB) sur le mode d'intermission d'enregistrement.
3. Régler la puissance de sortie 0.4 V avec L'atténuateur, puis enregistrer.
4. Faire jouer le signal enregistré à l'étape 3 et vérifier que la puissance de sortie soit en deçà de la normale.
5. Si elle n'est pas en deçà de la normale, régler platine B: VR5 (canal de gauche) [[VR6 (canal de droite)]] et platine A: VR7 (canal de gauche) [[VR8 (canal de droite)]] et répéter les étapes (2), (3) et (4) jusqu'à ce que la puissance de sortie soit en deçà de la normale.

Valeur normalisée:  $0V \pm 0,5dB$

## Circuit de réduction des bruits Dolby

1. Installer une bande normale et appliquer un signal de 5 kHz sur le mode d'intermission d'enregistrement.
2. Régler avec l'atténuateur de telle sorte que la puissance de sortie entre la borne ⑦ de IC401 (canal de gauche) [[IC402 (canal de droite)]] et la masse soit de 12,3 mV.

### —Dolby B (Caractéristiques de codage)—

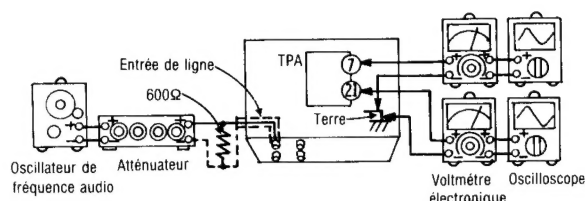
3. Régler le commutateur de réduction des bruits sur "Dolby B" et changer le signal d'entrée sur 1 kHz, 5 kHz.
4. Vérifier que la puissance de sortie entre la borne 21 de IC401 (canal de gauche) [[IC402 (canal de droite)]] et la masse change tel qu'il est spécifié à partir du niveau d'entrée sur le mode de sortie de réduction des bruits.

Valeur normalisée:  $6 \pm 2,5dB$  (1 kHz),  $8 \pm 2,5dB$  (5 kHz)

### —Dolby C (Caractéristiques de codage)—

5. Régler le commutateur de réduction des bruits sur "Dolby C" et changer le signal d'entrée sur 1 kHz, 5 kHz.
6. Vérifier que la puissance de sortie entre la borne 21 de IC 401 (canal de gauche) [[IC402 (canal de droite)]] et la masse change tel qu'il est spécifié à partir du niveau d'entrée sur le mode de sortie de réduction des bruits.

Valeur normalisée:  $11,5 \pm 2,5dB$  (1 kHz),  $8,5 \pm 2,5dB$  (5 kHz)



TPA: { IC401 (Canal de gauche)  
IC402 (Canal de droite)



# ESPAÑOL

Sírvase utilizarse junto con manual de servicio para el model No. RS-X888.

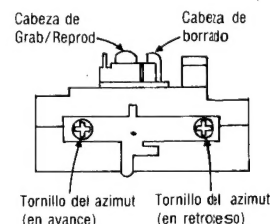
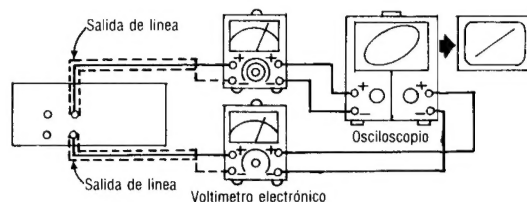
## MÉTODOS DE AJUSTE Y MEDIDA

### Instrumento de medición

- EVM (Voltímetro electrónico)
- Osciloscopio
- Frecuencímetro digital
- Oscilador AF
- ATT (Atenuador)
- Voltímetro CC
- Resistor (600Ω)

### Ajuste acimutal de cabeza

1. Reproducir la parte ajustada de acimut (8kHz, -20dB) de la cinta de prueba (QZZCFM) y regular el tornillo de ajuste de ángulo de manera que las salidas de CH-1 y CH-D sean maximizadas. (Cuando las posiciones de ajuste sean diferentes de CH-1 y CH-D, encontrar una posición donde las salidas de CH-1 y CH-D estén equilibradas y, luego, hacer el ajuste.)
2. Al mismo tiempo, trazar una forma de onda de lissajous y eliminar la deflexión de fase.
3. Efectuar el ajuste en la modalidad de función regresiva. Comprobación de diferencia de nivel de rotación progresiva y regresiva.
4. Reproducir la parte ajustada de ganancia de reproducción (315Hz, 0dB) de la cinta de prueba (QZZCFM) y, luego, comprobar que la diferencia de nivel de rotación progresiva y regresiva esté dentro de 1dB.
5. Después del ajuste, aplicar cierre por tornillo al tornillo de ajuste de ángulo.



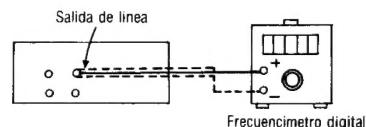
### Ajuste de velocidad de cinta (PLATINA A, B)

#### —Alta velocidad—

1. Poner el conmutador de velocidad de cinta de compaginación en "X2" y poner a tierra la Platina B: TP3 y Platina A: TP4.
2. Reproducir la parte de en medio de la cinta de prueba (QZZWAT).
3. Ajustar la Platina B: VR803 y Platina A: VR804 de manera que la salida esté dentro de la estándar.

#### —Velocidad normal—

4. Poner el conmutador de velocidad de cinta de compaginación en "X1" y abra la Platina B: TP3 y Platina A: TP4.
5. Reproducir la parte de en medio de la cinta de prueba (QZZCWAT).
6. Ajustar la Platina B: VR801 y Platina A: VR802 de manera que la salida esté dentro de la estándar.



valor estándar: 3000 ± 15 Hz (normal) 6000 ± 30 Hz (alta)

## Respuesta de frecuencia de reproducción

1. Reproducir la parte de respuesta de frecuencia de reproducción (315Hz, 12,5kHz~63Hz, -20dB) de la cinta de prueba (QZZCFM).
2. Comprobar que la frecuencia esté dentro de la gama mostrada en la Fig. 1 tanto para CH-1 como para CH-D.

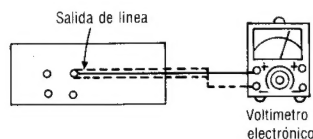


Fig. 1

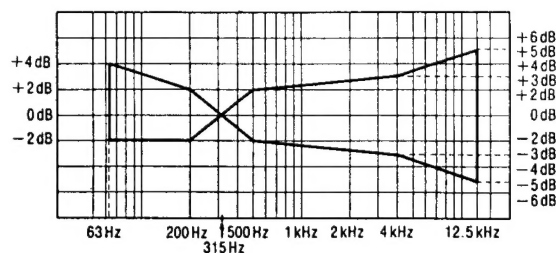


Fig. 2

## Ajuste de ganancia de reproducción (PLATINA A, B)

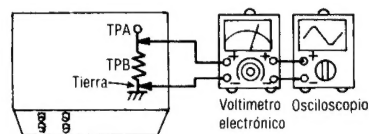
1. La conexión del equipo de prueba se muestra en la Fig. 1.
2. Reproducir la parte ajustada de la ganancia de reproducción (315Hz, 0dB) de la cinta de prueba (QZZCFM).
3. Ajustar la platina B: RV1 (CH-1) [[RV2 (CH-D)]] y la platina A: RV3, (CH-1) [[RV4 (CH-D)]] de manera que la salida esté dentro de la estándar.

**Valor estándar:  $0,4V \pm 0,5dB$**

## Ajuste de corriente de borrado (PLATINA A, B)

1. Insertar la cinta metálica.
2. Apretar los botones de grabación y pausa.
3. Ajustar RV301 (platina B) [[RV302 (platina A)]] de manera que la salida entre TP1 (platina B) [[TP2 (platina A)]] y tierra esté dentro de la estándar.

**Valor estándar:  $170 \pm 5mA$  (Metal)  $170 \pm 5mV$**



**TPA: TP1 (platina B), TP2 (platina A)  
TPB: RV301 (platina B), RV302 (platina A)**

## Respuesta de frecuencia total (PLATINA A, B)

1. Poner una cinta virgen normal (QZZCRA) y grabar aplicando señal (50Hz~12.5kHz) 20dB atenuada de la señal de nivel de entrada de referencia (1kHz, -24dB).
2. Reproducir la señal grabada en el paso 1 y comprobar que el nivel de cada frecuencia de salida esté dentro de la gama mostrada en la Fig. 4 en comparación con la frecuencia de referencia (1kHz).
3. Si no está dentro de la gama estándar, ajustar la corriente de polarización mediante platina B: RV9 (CH-1) [[RV10 (CH-D)]] y la platina A: RV11 (CH-1) [[RV12 (CH-D)]] de manera que el nivel de frecuencia esté dentro del estándar.
  - Subir el nivel en la gama de alta frecuencia.....Incrementar la corriente de polarización.
  - Bajar el nivel en la gama de alta frecuencia.....Disminuir la corriente de polarización.
4. Después de eso, incrementar la señal grabada en la cinta virgen CrO2 (QZZCRX) y la cinta virgen metálica (QZZCRZ) hasta 14kHz y ajustar de la misma manera como mencionado arriba y comprobar que el nivel de frecuencia esté dentro de la gama mostrada en la Fig. 5.

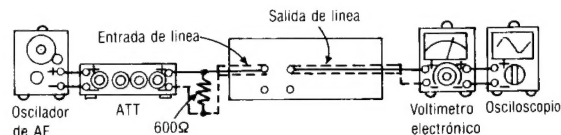


Fig. 3

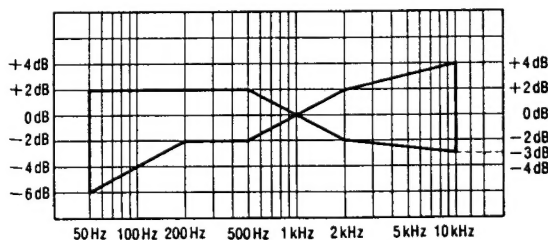


Fig. 4

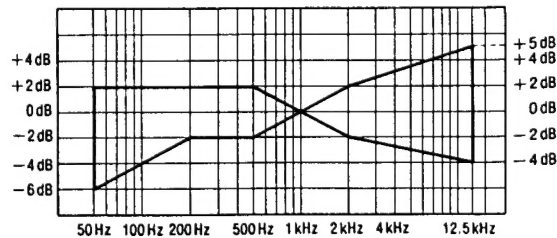


Fig. 5

## Ajuste de ganancia total (PLATINA A, B)

1. La conexión del equipo de prueba se muestra en la Fig. 3.
2. Colocar una cinta virgen normal (QZZCRA) y aplicar la señal de nivel de entrada de referencia (1 kHz, -24 dB) en la modalidad de pausa de grabación.
3. Ajustar la salida 0,4V mediante atenuador y, luego, grabar.
4. Reproducir la señal gradada en el paso 3 y comprobar que la salida esté dentro de la estandard.
5. Si no está dentro de la estandard, ajustar la platina B: RV5 (CH-1) [[RV6 (CH-D)]] y la platina A: RV7 (CH-1) [[RV8 (CH-D)]] y repetir el paso (2), (3) y (4) hasta que la salida esté dentro de la estandard.

**Valor estandard:  $0V \pm 0,5dB$**

## Circuito RR Dolby

1. Colocar una cinta normal y aplicar señal 5kHz en la modalidad de pausa de grabación.
2. Ajustar mediante atenuador de manera que la salida entre terminal ⑦ de IC401 (CH-1) [[IC402 (CH-D)]] y tierra sea 12,3mV.

### —Dolby B (Codificar característica)—

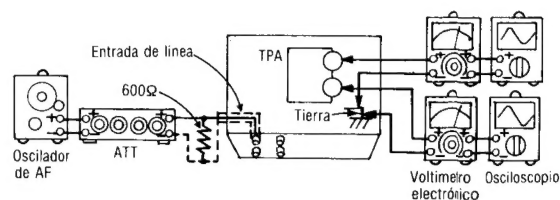
3. Poner el interruptor RR en "Dolby B" y cambiar la señal de entrada a 1 kHz, 5kHz.
4. Comprobar que la salida entre terminal ⑩ de IC401 (CH-1) [[IC402 (CH-D)]] y tierra cambie como especificado por el nivel en la modalidad de salida RR.

**Valor estandard:  $6 \pm 2,5dB$  (1 kHz),  $8 \pm 2,5dB$  (5 kHz)**

### —Dolby C (Condificar característica)—

5. Poner el interruptor RR en "Dolby C" y cambiar la señal de entrada a 1 kHz, 5kHz.
6. Comprobar que la salida entre terminal ⑫ de IC401 (CH-1) [[IC402 (CH-D)]] y tierra cambie como especificado por el nivel en la modalidad de salida RR.

**Valor estandard:  $11,5 \pm 2,5dB$  (1 kHz),  $8,5 \pm 2,5dB$  (5 kHz)**



TPA: { IC401 (CH-1)  
IC402 (CH-D)